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A COMPENDIUM
OF
PRACTICAL MEDICINE

FOR THE USE OF
Students and Practitioners of Medicine

BY

WILLIS WEBSTER GRUBE, A. M., M. D.,

Professor of Physiology and of Clinical Medicine in the Toledo Medical College; Visiting Physician to the Toledo Hospital; Physician to the Toledo Medical College Dispensary for the Relief of the Out-door Poor; Member of the American Medical Association; Member of the Tri-State Medical Association; Member of the Toledo Medical Association, etc., etc.

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PREFACE.

In presenting this volume to the medical profession, it may not be improper to state the circumstances which led to the undertaking, and the design which it is intended to accomplish.

The frequent requests on the part of medical students whom it has been my pleasure to instruct during the past few years, to prepare a compendium of practical medicine which shall aid them in acquiring established facts, is the only apology I have to offer for its appearance.

This work is designed to present the leading facts and principles of medicine, in a brief, clear and concise manner, so that they may be readily comprehended: My chief aim has been to prepare a book of an essentially practical character—one neither so meager in detail as to be next to useless, nor so overladen with unnecessary matter as to be unwieldy and lacking in precise knowledge. The ever-recurring wants and requirements of the medical student and practitioner have been kept constantly in view.

In the preparation of the work, the author has carefully examined all the best material at his command and freely used it; the special object being to have it abreast of the present knowledge on the subjects treated as far as such is possible in a work of this kind; and every effort has been made to give it all the freshness of interest and clearness of expression possible.

The discussion or even mention of mere theories has been purposely avoided, for experience has taught us that such discussions serve only to confuse and discourage. In issuing a volume of this character, it is perhaps but just to say that of course it cannot and is not intended to replace the classical works. For more minute information, extended description and elucidation and other minutiae for which the work of reference is consulted, recourse must be had to more extended text-books

and similar sources of information. Nevertheless, it is confidently believed that the present volume meets a distinct and imperative need of the medical student and general practitioner, conveying in condensed and convenient form concise and practical information for which they are liable to have continual use.

In my endeavor to keep this book within reasonable limits, I have touched but lightly upon the pathology of disease, except in those cases in which such knowledge would aid in the treatment, and have purposely omitted all unimportant details. Notwithstanding my utmost efforts at condensation, the work has grown beyond the contemplated size.

Much of the matter embraced in a work of this kind is the common property of the medical profession, and credit has been given for facts or opinions by merely inclosing the name of the author in parenthesis. If I have failed to give credit in any case, it is unintentional.

I would gladly acknowledge my indebtedness to Prof. J. H. Pooley, M. D., of Toledo, for the preparation of Chapter IV., on "First Help in Surgical Emergencies," and to Prof. W. J. Gillette, M. D., of Toledo, for the preparation of Chapter III., on "Medical Diseases of Women."

I also acknowledge my indebtedness to the standard works of Bartholow, Loomis, Flint, DaCosta, J. L. Smith, Skene, Thomas, Pozzi, Anderson, Fox, Noyes, Milton, Keyes, Bosworth, Bryant, Lusk, Habershon, Starr, Hammond, and many others.

To the many kind friends who have encouraged me to undertake this work, I return my warmest thanks.

W. W. GRUBE, M. D.,

1502 Collingwood Ave.,
Toledo, Ohio.

MARCH, 1897.

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CHAPTER I.

THE EXAMINATION OF PATIENTS.

To elicit the facts of a case by careful examination is the first requisite for diagnosis. There are two methods of examination—the synthetical and the analytical. The synthetical method is the more scientific, but is too full, and calls for too much labor, to meet the requirements of ordinary professional life. It is the best where the symptoms are obscure and ill defined. It consists in getting the family history and the history antecedent to the present disease, before the present condition is explored.

In the analytical method the present condition is first ascertained.

Da Costa uses the following plan of examination: 1. Date of examination. 2. Name. 3. Age. 4. Color. 5. Place of Birth. 6. Present abode. 7. Occupation. 8. In female, whether married or not, number of children, and date of last confinement.

History—I. History antecedent to present disease: (1) Constitution and general health. (2) Hereditary predisposition (family history.) (3) Previous diseases or injuries. (4) Habits and mode of life. (5) Hygienic influences to which exposed.

II. History of present disease: 1 Its supposed exciting cause. 2 Date of seizure. 3 Mode of invasion. 4 Subsequent symptoms in order of succession. 5 Previous treatment.

Present Condition of Patient. I. General symptoms: 1. Position, in bed—mode of lying—out of bed—movements. 2. Aspect, of body—of countenance. 3. Skin. 4. Pulse. 5. Tem-

perature. 6. Respiration. 7. Tongue. 8. Appetite, thirst, and condition of bowels. 9. General state of urinary secretion. 10. Sensations of the patient as to pain, etc.

II. Examination of special regions. Diagnosis. Treatment.

Position of the Body. If the patient is in bed, note how he lies; if out of bed, how he walks. If a healthy person be suddenly confined to his bed, the inference is that he will have an acute and severe disease. If the patient lies fixed upon one side, it shows, as a rule that the action of the lung of this side is impaired. The patient may be in bed but unable to lie down on account of distress in breathing. This dyspnoea is encountered especially in diseases of the heart, or where fluid is effused into the air cells or into both pleural cavities.

In some diseases of the brain the gait is staggering. In one-sided palsy the movements are uncertain.

General Aspect.—*Expression of Countenance.* The eye notices whether the body is bulky or wasted. If the bulky aspect is due to air in the tissues, they crepitate under the finger; if too fluid, the skin pits under pressure.

Emaciation is a more frequent symptom than augmentation. It may take place rapidly or gradually. Among the countenances most frequently met with is that of apathy and stupor. The eye is dull and listless; the face pale or flushed with fever. This look is common in fevers of a low type and is combined with dark material on the lips, gums and teeth.

Unnatural fulness and congestion of the features are sometimes observed in enlargements of the heart, and oftener still in habitual drunkards.

The same aspect is seen in apoplexy and in typhus fever. A pinched expression is found when there is intense anxiety or pain. The Hippocratic countenance denotes the moribund state. It is characterized by marked pallor with more or less lividity, pinching of the nostrils, sinking of the eyes, hollowness of the temples, coldness and transparency of the ears, dropping of the lower jaw.

The face of shock, with its great pallor, its anxious or frightened look, is seen after severe injuries and operations.

A dusky flush on the face, if associated with rapid breathing, is almost a certain indication of inflammation of the lung.

Puffiness of the eyelids in a pallid person is very apt to be expressive of Bright's disease.

There is the straw-colored, anæmic hue of malignant disease; the jaundice, melancholy look of an hepatic affection.

Skin.—Coldness of the skin indicates a weakened capillary circulation. Protracted coldness, whether attended with dryness or with clamminess, is of evil augury. The skin is pale whenever the blood is poor and watery. In wasting and prostrating ailments the skin feels very relaxed and soft. The skin may be dry, moist, or profusely wet and sodden.

In most fevers with high temperature the skin is hot. Now, if we make the patient's skin moist, we promote his comfort and well-being. Small, often-repeated doses of tincture of aconite or tartar emetic will induce perspiration.

In many cases of diabetes and Bright's disease, it is very difficult to make the very dry skin perspire.

The two chief causes of sweating are weakness, and a fall in a febrile temperature, two causes often combined in the same person in exhausting febrile disease, as in phthisis.

In exhausting diseases, sleep may produce sweating. Profuse sweating occurs during convalescence from scarlet fever.

With the exception of rheumatic fever, profuse sweating at the commencement of an acute febrile disease, when the temperature remains high, indicates great weakness. Duskiness of the face, ears and under the nails shows weakened heart action.

Pulse.—The pulse is an accurate index of the condition of the heart, and is therefore the most valuable guide in disease.

The importance of the pulse is manifest when we consider that disease kills by arresting the heart. Whilst the heart beats there is life and hope. In many instances, the pulse gives the first signs of danger, as in the case of pneumonia, in which disease so long as the pulse continues good we have fair hopes of our patient. In other instances the nervous system first gives way, as shown by sleeplessness and delirium, and this depresses and weakens the heart.

In any case it is the ultimate effect of the disease on the heart that destroys life.

The pulse-beats may be frequent or infrequent, slow or quick; small or large; compressible or incompressible; regular or irregular; or intermittent.

By the frequency of the pulse we mean the number of beats in a given time.

In a quick pulse each beat occupies less than the usual time, that is, each wave is of short duration relatively to the pause between the waves.

When the volume of the pulse is greater than usual, it is said to be large; or the volume may be less than usual, when it is said to be small.

When the fingers can easily stop the pulse it is said to be compressible; when on the other hand, it can be arrested only with difficulty or not at all, the pulse is said to be incompressible.

In an irregular pulse, succeeding beats differ in length, force and character.

In an intermittent pulse a beat is from time to time lost.

The frequency of the healthy pulse varies; thus, in some persons the normal pulse is 100, in others as low as 50 a minute. Five conditions produce a frequent pulse: fever, debility, excitement, hysteria, and cardiac disease.

In fevers the pulse is generally accelerated in proportion to the elevation of temperature, more in children than in adults.

When a pulse is more frequent than the temperature will explain, it indicates cardiac weakness. In all febrile diseases, a pulse in adults over 120 is serious and indicates cardiac weakness; a pulse of 130 or 140 indicates great danger; and with a pulse at 160 the patient almost always dies.

In rheumatic fever a pulse of 120 indicates great danger. In such a case, the temperature is 104° to 105° F., the patient is prostrate, the tongue dry, and sordes collect on the lips; a case like this often ends fatally, and when the pulse rises above 120, the patient will pretty surely die.

If pericarditis, a complication of rheumatism, causes the frequent pulse, it is of less import.

An irregular pulse from mitral disease may be very frequent, 120, 130, or more, without indicating extreme danger.

Sometimes in typhoid fever, though the temperature is high, the pulse remains normal throughout the attack, and this shows absence of cardiac weakness.

In chronic diseases a frequent pulse very generally indicates cardiac weakness. A weakened heart diminishes arterial tension, and the pulse becomes soft and compressible. If the heart becomes still more weak, the pulse becomes small as well as quick, and compressible. Smallness of the pulse, therefore, indicates still greater weakness. When the pulse is very small it is said to be thready. The more frequent, the more compressible, the smaller the pulse, the greater the cardiac weakness, and the greater the need of cardiac stimulants.

The general condition of the patient may be good, but the pulse is frequent, small, compressible and quick, and indicates danger. The pulse in some persons is easily made frequent without this frequency indicating any danger. In some persons in perfect health we find a very small and compressible pulse. So long as the pulse remains good, we feel that our patient is comparatively safe.

An infrequent pulse occurs in some cases of blood-poisoning, as in jaundice, uræmia, and in these cases, the temperature is often subnormal. An infrequent pulse is met with, sometimes in fatty degeneration of the heart, and in aortic obstruction, in irritation of the vagus or its root, as in meningitis, cerebral tumors or compression.

The size of the pulse varies in disease. It is often large at the commencement of fever. The pulse is small in inanition, owing to the small quantity of blood. It is small, too, in mitral obstruction, and in mitral regurgitant disease, and in aortic stenosis; also with cardiac debility.

In an intermittent pulse, an occasional beat is missed, the rhythm being otherwise regular. An intermittent pulse is very different from an irregular pulse. Some persons have a life-long intermittent pulse, but ordinarily it does not occur till after middle age. It may be persistent or occasional; and when occasional only it is often due to an idiosyncrasy, and is caused by

some article of food, as tea, smoking or indigestion. By the intermission some persons are made very uncomfortable and nervous, and get the sensation as if the heart stopped or rolled over. In most cases an intermittent heart is of no significance.

An irregular pulse is of far more serious significance than an intermittent. The pulse is irregular, both in force and rhythm, succeeding beats differing in length, force and character. It is generally due to mitral, and rarely occurs in other forms of heart disease, though sometimes met with in great cardiac prostration, as in an acute febrile illness, a few hours before death. It occurs, too, in fatty degeneration of the heart, and in the first and second stage of meningitis. The irregular pulse indicates the need of digitalis. Whilst an irregular pulse almost always indicates mitral disease, yet a perfectly regular pulse may accompany either mitral obstruction or regurgitation. Although irregularity from mitral disease is rare in children, yet Ringer has seen aconite, in half-drop doses repeated hourly several times produce marked irregularity of the pulse. An irregular pulse is common in children with tubercular meningitis, and it is a diagnostic guide. In some cases of cerebral disease, with Cheyne-Stokes breathing, the pulse is irregular.

An irregular pulse may be due to much smoking, to venereal excess, and to tea drinking. The condition of the blood-vessels influences the pulse.

Through the action of the vaso-motor nerves on the muscular coat of the arteries, the small blood-vessels undergo relaxation or contraction. When the vessels are relaxed the blood passes easily from the arteries to the veins, hence arterial tension is slight, and the pulse is soft, large and compressible. This pulse is met with in the early stage of some fevers.

Arterial relaxation, or low tension, produces a dicrotic pulse. In this pulse one of the normal secondary waves of oscillation becomes greatly exaggerated, so that it can be easily felt by the finger. Indeed, it may be so distinct that an inexperienced person may mistake it for the primary wave. Ringer has known a nurse to make this mistake, and thus to double the number of true pulsations. A dicrotic pulse always indicates marked arterial relaxation, and often coincides with cardiac weakness

and is frequently met with in typhoid fever. When the vessels are contracted the blood escapes with greater difficulty from the arteries into the veins, and we have the pulse of high arterial tension. In this case the artery is hard and cord-like; it can be rolled under the finger and is easily traced in its course up the fore-arm. With the vessels in this condition, the pulsation is often so slight that it might readily be mistaken for a weak pulse; but its incompressibility prevents this error. In addition to being small, the pulse is slow and hard.

The following conditions give rise to high arterial tension: 1. Degeneration of vessels. 2. Bright's disease, especially the contracted kidney. 3. Gout, jaundice, lead-poisoning, ergot and gallic acid. 4. Affections of the nervous system. 5. The rigor of fevers.

High arterial tension and hypertrophy of the heart, associated with an increased quantity of urine containing a small quantity of albumen, enables us to diagnose the contracted form of Bright's disease.

During the rigor or chill of fevers the arteries contract, and produce a pulse of high arterial tension, which is frequent, small, hard, incompressible and slow. When the chill is over and the fever established, the arteries relax, and the pulse is large, full, and not easily compressed—bounding, as it is called.

In well-marked aortic regurgitation, the pulse is often characteristic. It is a pulse of extreme low tension. If the radial artery is at all visible with the limb dependent, this visibility becomes much more marked on raising the arm. In advanced aortic regurgitation, the pulse gives to the finger a sharp, quick stroke. This is the diagnostic quality of the pulse. The pulse feels as if a small ball or shot was puffed under the finger, and is called the shotty pulse. Visible pulsation of the whole length of the carotid to the lobe of the ear, and of the temporal and perhaps of the facial artery, is far more frequently due to aortic regurgitation than to high arterial tension, or to low arterial tension, or to degeneration of the arteries.

Aortic regurgitation is especially a disease of middle or advanced life, being due to age and strain. In arterial degeneration the arteries become elongated and tortuous, easily visible

in the brachial just above the elbow. The arteries feel hard and cordy, and sometimes calcareous plates can be felt.

The pulse of aortic obstruction is slow, generally small, infrequent, and often hard. In marked mitral obstructive disease, the pulse, when not irregular, is small and compressible.

Aneurism of the aorta often delays the pulse, and it may do this on one side more than on the other, or on one side alone. In aneurism of the aorta influencing the arteries of one arm only, the artery on this side can be felt to fill more slowly (Ringer).

As the full pulse is not always strong, neither is the small pulse always weak (DaCosta).

Such are the meanings attached to the various characters of the pulse. The appreciation of these different kinds of pulses requires considerable practice.

Tongue.—The tongue is a mirror which reflects the condition of the digestive functions, the complexion of the nervous power and of the blood, and the state of the secretions.

We examine the tongue in regard to its movements, its volume, its dryness or its humidity, its color and its coating.

The movements of the tongue are impeded and tremulous in exhausted states of the system. It is protruded slowly and with difficulty in fevers of a low type. In hemiplegia one side is crippled, and the tongue turns toward one of the corners of the mouth.

The volume of the tongue is changed by its own disease. Yet a broad and flabby tongue, on the sides of which the teeth leave their marks, is sometimes found in chronic ailments of the digestive organs, and as a result of the action of mercury and of certain poisons. It is observed in some diseases of the brain and heart, and in typhus and scurvy.

Dryness of the tongue indicates deficient salivary secretion. The tongue is dry in acute visceral inflammations, in the exanthemata, and in typhoid fever. If the tongue be very dry, of a dark color, glazy, or furred or fissured, it denotes depraved blood. A fissured tongue may occur in chronic affections of the liver and intestines, and in some persons it is congenital. The tongue may become dry from persistent openness of the mouth,

as during sleep, or from coma, and has no significance. Among chronic diseases the tongue is most apt to be found dry in diabetes.

A dry tongue is never a favorable sign. It is present in about fifty per cent. of fatal cases; more than any other it foretells death. A moist or humid tongue is a favorable sign.

The dryness first invades the tip and extends up the centre. A dry tongue generally indicates nervous depression, often shown by low muttering delirium. This depression is often due to want of sleep. Narcotics, therefore, like chloral, bromide of potassium, or opium, by inducing sleep, soothe and strengthen the nervous system, and indirectly moisten the tongue.

The dry tongue is often an indication for alcoholic stimulants. The two chief uses of alcohol are to assist digestion and to sustain the nervous system. Now sleep is the best restorative; hence fever patients who sleep well do not as a rule require stimulants.

But, if in spite of sleep the tongue remains dry and delirium persists, then alcohol is indicated. Usually a patient with a dry tongue has a frequent, quick and compressible pulse calling for alcoholic stimulation.

If the alcohol makes the tongue drier and more coated, it is contraindicated. In the aged, the tongue often becomes dry without fever.

The color of the tongue is a useful sign. A broad, pale, flabby teeth-indentèd tongue indicates anæmia with a relaxed condition of the tissues. This tongue is met with in chlorosis, and in some chronic diseases, as Bright's, and always signifies the need of iron.

In diabetes the tongue becomes smooth, glazed, shiny, beefy looking, abnormally clean and often very dry. If the tongue be red, too clean, too smooth or slightly furred, it points to an irritable state of the stomach, to dyspepsia. It is met with in drunkards and in phthisis when the intestines are ulcerated, and in tubercular peritonitis. One minim of Fowler's solution given before meals will improve this tongue. The tongue is exceedingly red in scarlet fever, and is known as the "straw-

berry tongue." A red, smooth tongue is a sign of failing nutrition.

The "nervous tongue" is very slightly coated and covered with a slight froth, and is met with in persons of nervous temperament, and in cases where the nervous system has been depressed by overwork, and worry.

The coating of the tongue is hardly discernible in health; but in disease the epithelium accumulates, and the tongue has a loaded, whitish appearance due to an excess of white epithelium. The coat is apt to be yellowish in disturbances of the liver, and of brown or very dark hue when the blood is contaminated.

There are many healthy persons who wake up every morning with their tongues covered, more especially at the back, with a heavy coating, which wears off after a meal. The tongue may be bare of its epithelium in certain instances of scurvy, chronic diarrhœa, dysentery, malaria, scarlet fever and typhoid fever.

Local causes often coat the tongue. Enlarged tonsils often coat the back of the tongue. Decayed teeth often fur a portion of the tongue. Excessive smoking almost always coats the tongue. A coated tongue very frequently indicates derangement of the stomach, bowels or liver.

If the patient be constipated, and the stools light colored, and the tongue coated, give calomel with extract of belladonna, or hyoseyamus.

If the bowels are freely open, and the tongue still coated, give in addition to the above, five drops each of tincture of nux vomica and dilute nitric acid thrice daily.

After an acute illness like typhoid fever, the tongue sometimes parts with its coating in flakes.

The manifestations afforded by the tongue which are indicative of danger, are tremulous action, dryness, a livid color, a very red, shining or raw aspect, and a heavy coating of a dark or black hue (Ringer and DaCosta).

Sensations of Patients.—Sick persons have many disagreeable feelings. They complain of chills, heat, languor, restlessness and of uneasiness; but their most constant complaint is of pain.

Pain may be dull or gnawing, acute and lancinating, per-

manent or remitting. A dull pain is generally persistent. It is present in congestions, in chronic inflammations, and in acute inflammations of the parenchymatous viscera, and of mucous membranes.

Acute pain is usually remittent and not so fixed to one spot. It is present in spasmodic affections, in neuralgia, and, with extremely sharp and lancinating pangs, in malignant disease.

Pain varies much in intensity. It is sometimes so extreme as to cause death. We have to judge of its severity partly on the testimony of the sufferer.

The seat to which the pain is referred is far from being always the seat of the disease. A calculus in the bladder may produce dragging sensations extending down the thighs; inflammation of the hip joint gives rise to pain in the knee; disorders of the liver occasion pain in the right shoulder. The pain is either transmitted in the course of a nerve involved, or is sympathetic.

Pain in diseases of the periosteum and bones is mostly boring and constant; in the serous membranes, sharp; in the mucous membranes, dull; and in the skin, burning or itching.

Pain produced by pressure is called tenderness (DaCosta).

Temperature.—The clinical thermometer may be put under the tongue, or in the axilla, or in the rectum. The rectal temperature is about one degree higher than the mouth or axillary temperature. The temperature in health varies in the 24 hours. During the day, between 9 A. M. and 4 P. M., the healthy temperature is usually about 99° F., or it may rise to 99.5° F. Any rise above 99.5° F. constitutes fever. At midnight the temperature is about 97° F., or even 96° F. The temperature should be taken in the morning about 7, and in the evening at the same hour. If only a single observation be taken, it is best done in the evening.

While any elevation of temperature above 99.5° F. indicates disease, it need hardly be pointed out that a normal temperature does not necessarily indicate health. Many diseases, both acute and chronic, during their whole courses are unattended with fever. As a rule, the morning temperature is lower than the evening. In rare cases the reverse happens. In some

chronic cases, as phthisis, and sub-acute rheumatism, the fever may last only a few hours during the day.

In ordinary cases, the pulse and temperature rise synchronously, and every degree above 98° F. corresponds with an increase of ten beats of the pulse. When the temperature exceeds 106° F., the patient may be looked upon as in danger, except the rise be due to malarial fever. Under these circumstances, it is rapid, occurring in a person who yesterday, or but a few hours before, was healthy. In typhoid fever a temperature of 105° F. is proof of grave disease. In pneumonia, a temperature above 104° F. is a symptom of very serious seizure.

Stability of temperature from morning to evening is a good sign; the temperature remaining the same from evening till morning is a sign that the patient is getting worse. If, after the defervescence, the thermometer again indicates a decided rise, it shows a return of the malady or complication.

Specific forms of febrile diseases have their characteristic temperature records. In measles, for instance, the temperature rises toward the breaking out of the rash, reaches its height with the period of eruption, and in twenty-four hours succeeding it falls rapidly. In scarlet fever the thermometer marks 105° F. or more at the beginning, and the fever gradually subsides. Typhoid fever has its characteristic record; so have the malarial fevers theirs. The temperature of tetanus rises to great heights before death.

A temperature above 107° F. is almost certain to be the forerunner of a fatal issue. But recovery may take place. Da-Costa reports a case of cerebral rheumatism, in which the thermometer marked 110° F., yet the patient got well.

In a case of injury to the spine after a fall, reported by Teale, the young lady lived, though the temperature reached above 122° F., and ranged for days between 112° F. and 114° F. A case of hysteria and intercostal neuralgia has been reported, in which the thermometer registered 117° F., and the patient recovered. The temperature may, also, be very high for a short time, from emotion. In children the temperature is relatively higher than in adults with the same disturbance.

The thermometer assists us in diagnosis. We should search carefully to discover the cause of the fever. The fever may be due only to the acute contagious diseases, acute inflammation of some organ, rheumatism, gout, or to the diseases causing chronic fever. In the acute specific diseases, fever and sore throat would point to scarlet fever; severe backache, headache and sore throat to small-pox; coryza, with cough, to measles. Severe fever, ushered in by a severe rigor, with severe headache, and pain in the limbs, would suggest typhus; whilst dull, frontal headache, with diarrhoea, would strongly point to typhoid fever. If the second day passes without the occurrence of a rash, the case in all probability, is not one of scarlet fever; for the rash of this disease appears on the first or second day. If the third day passes without a rash, the case is not small-pox, for this rash usually appears punctually on the third day. If the fourth day passes without a rash, the case is not one of measles. If the fifth day passes without a rash, the case is not typhus, for the rash punctually appears on this day.

The diagnostic value of temperature is shown in the following: A patient is suddenly seized with severe pain on the side of the chest. The pain, shooting or stabbing in character, is intensified on coughing or deep breathing. This is the characteristic pain of pleurisy and of pleurodynia; one an inflammatory disease, the other a non-inflammatory disease—which is it? Before the physical signs develop nothing but the thermometer will solve the difficulty. If the attack be pleurisy, an inflammatory disease, there is fever, whereas if the attack be pleurodynia, a non-inflammatory disease, fever is absent.

The temperature rises rapidly in most inflammations, in typhus, scarlet fever, measles, erysipelas, etc. In some diseases the temperature rises more gradually. This happens in most cases of tuberculosis and in almost all cases of typhoid fever, and sometimes in rheumatism and pleurisy.

The duration of the fever often aids in the diagnosis. In most acute diseases the fever usually passes away by the fifth or tenth day. In some cases of typhoid fever the symptoms are not sufficiently marked to enable the doctor to decide whether the case is one of typhoid fever, tuberculosis or phthisis. If the

fever goes on beyond thirty days then probably the patient suffers from consumption, and each additional day of fever strengthens this conclusion.

A sudden and considerable fall of temperature, if not due to the natural termination of the illness, means sudden collapse. It is oftenest met with in typhoid fever, and it means hemorrhage into the bowels, or perforation of the intestines. Each week in typhoid fever a great morning fall often occurs. A fall equal to that due to hemorrhage or perforation, may occur at any time, but the fall with these accidents is more persistent, and is always accompanied by the symptoms of collapse.

Chronic Fever.—In some diseases fever may persist for weeks or months, and by its very duration help the diagnosis. In most cases, when the fever has lasted only a short time, the other symptoms reveal the nature of the disease; but frequently the nature of the malady remains for a long time obscure, and then the fever aids in the diagnosis.

Since most acute illnesses come to an end, in the great majority of cases, before the thirtieth day, we may take that as the limit of acute fever.

Chronic fever occurs in phthisis, abscess, syphilis, ague, rheumatism, in most cases of leucocythemia, pernicious anæmia, and chronic pyæmia. The temperature is an index of the activity of the disease. If the fever be high the disease is active. In some very chronic cases of phthisis the disease advances too slowly to elevate the temperature.

By the aid of the thermometer we can often diagnose phthisis, before we can detect any physical signs, and at a period when symptoms themselves are insufficient to justify a grave diagnosis. A patient suffers from chronic fever. What is the cause of it? So far as we at present know chronic fever occurs only in tuberculosis, catarrhal pneumonia, large abscesses, rheumatism, ague, occasionally in syphilis, in some cases of leucocythæmia, in lymphadenoma, and in pernicious anæmia and chronic pyæmia. The discrimination of these diseases is rarely difficult.

The following cases illustrate the usefulness of the thermometer in doubtful cases of phthisis:

accompanied by cough and expectoration, and possibly hæmoptysis.

woman between 30 and 35 years of age, fails slightly in , complains of slight weakness, is soon tired, but is never ugh to be confined to bed. Her appetite is bad. There rifting cough with expectoration slightly streaked with once or twice. There may be a family predisposition to is. No physical signs are apparent; yet the temperature, nightly to 101 or 102° F., declares the true nature of sease, (Ringer and Da Costa).

CHAPTER II.

DISEASES IN GENERAL.

ABORTION.

T. Gaillard Thomas says, that the uterus is the organ which divides one sex from the other, that this organ has three entirely distinct and different periods of existence, that from birth to the age of thirteen, or puberty, it is undeveloped and unimportant, and that from thirteen to fifty its career is one of intense activity, and has a marked influence upon the whole being of a woman, that from the age of about fifty, to the close of life it sinks into insignificance again, and becomes an atrophied and unimportant organ—of no use whatever, that impregnation and conception are two entirely different things, that the ova may become impregnated twelve times a year, and yet conception may not result; that conception is the fixation of the impregnated ovum; that up to two and a half months there is no placenta, so far as abortion is concerned, that from the third month the placenta is the all-important element as regards abortion; that abortion is to be defined as the premature casting off of the product of conception before the end of the fourth month; that between the end of the fourth month and the end of the sixth month it is called miscarriage, and that between the end of the sixth month and the end of the ninth month it is called premature labor.

When abortion occurs, one of four things may take place: First, the entire contents of the uterus—the decidua vera, the decidua reflexa, the amnion, the chorion, and the fœtus may be expelled. Second, the fœtus may be expelled with the amnion

orion, while the decidua vera and reflexa are left in the

These membranes will come away later in the lochial age. Third, the foetus alone may be expelled. This is a rare case. In this case the uterus must be emptied of its contents or the patient will have a violent chill and high fever with all the signs of septicæmia. Fourth, the foetus and membranes may be expelled, and the placenta, when one is left behind. Thus, we see that abortion does not always run in the same way, and that the physician must treat each according to its character.

Causes.—1. Carbonic-oxide gas inhaled by the mother is certain to produce uterine contractions than ergot. The long confinement within confined quarters of pregnant women cause a large number to abort, due to the poisoning of their blood by this gas. This gas, generated after death, produces violent contraction, and post-mortem delivery of pregnant women. 2. The poisons in the blood produced by small-pox, measles, diphtheria, and malaria. 3. Chorea, tetanus, and reflex spasms, such as fright. 4. Certain drugs, such as ergot, quinine, etc. 5. Anything which will kill the foetus will cause an abortion, such as a twist, or knot in the umbilical cord, syphilis, a kick or blow upon the abdomen. 6. Retroflexion of the uterus. In ante flexion of the uterus, sterility is common, but endometritis and abortion are rare. 7. Uterine fibroids or other neoplasms, and laceration of the external os. 8. Some women are liable to the body from vomiting, coughing and straining, long railroad journeys, from violent exercise, from falls, and the like. A large proportion of abortions occur about the end of the third month. During an abortion, the attitude of the physician beyond the control of hemorrhage, should be an expectant one. In habitual abortion the most common causes are syphilis and retroflexion of the uterus. There are many women of nervous temperament in whom the slightest cause is often sufficient to cause an abortion; while, in others, it is exceedingly difficult to get rid of the contents of the uterus before the normal period of pregnancy.

This is shown in attempts at criminal abortion. Lusk relates the case of a peasant who took his wife, while pregnant,

behind him on horseback and started off with her at full gallop with the view of causing her to miscarry. Having thus thoroughly shaken her, he dropped her suddenly to the ground without slackening his speed. This brutal manoeuvre he repeated twice, without the least success. Thomas mentions cases of pregnant young women in Paris who attempted suicide by jumping into the Seine, and were rescued and went on to full term. Pregnant women, excited by an alarm of fire, have jumped from an upper window, breaking several bones, and have passed on to full term as though nothing had happened.

Prognosis.—The prognosis is good, except in criminal cases.

Dangers.—1. Hemorrhage. 2. Putrid intoxication from absorption of the decomposing product of conception. 3. Septicæmia and peritonitis. In this case the septic material is conveyed to the womb by the hand or instruments of the physician. 4. Suppurative arthritis. 5. Cellulitis and abscess. 6. Embolism. This may cause hemiplegia. 7. Air in the veins. The air is usually introduced through a hollow instrument used in the uterus. 8. Tetanus. This comes from putrid infection.

Symptoms.—There are three essential symptoms: 1. Hemorrhage. 2. Pain. 3. Vomiting; this last may be absent.

Treatment.—The treatment is divided into: 1. *Prophylaxis in cases of habitual abortion.* If the cause be syphilis, give the antisyphilitics. If the cause be displacements of the uterus, correct these. If the cause be nerve irritability, give the patient teaspoonful doses of the fluid extract of viburnum prunifolium three times daily, beginning two days before the menstrual date, and continuing for eight days, with the patient in bed. 2. *Arrest of threatened abortion.* Keep the patient quiet in bed and give the following:

℞ Potassii Bromidi.....gr. x.
Chloral hydratisgr. vi.
Morphinæ sulphatis.....gr. ʒ.—M.

Sig.: One dose.

Repeat if necessary. The chloral induces sleep, the bromide has a sedative effect upon the nervous system, and the morphine robs life of its cares. If the patient be bleeding freely, apply a tampon, and remove it in twenty-four hours. In the first two

months little treatment besides rest in bed for a few days is required. 3. *The treatment of inevitable abortion.* Get the woman through with the abortion as quickly as possible, and leave nothing in the uterus for bacteria to work on. Your hands, instruments, sponges, and tampon, if used, should all be aseptic.

If the abortion is going on and the woman is losing large quantities of blood, the tampon is the best remedy. When in the third month the ovum is thrown off without rupture of the fetal membranes, the hemorrhage is rarely dangerous. The treatment is very simple—a carbolyzed douche morning and evening. When the sac ruptures the hemorrhage is usually profuse. The treatment indicated in this case is to check the hemorrhage by a tampon, and afterwards empty the uterus by means of the finger or curette. Do not give opium to quiet pain. Do not give ergot unless the cervix is well dilated. A good tampon is made by soaking cotton wool in carbolyzed water, five per cent. solution, and after pressing out the excess of fluid, make into flat pieces, and pack well around the vaginal portion then over the os. A tampon should not remain over twelve hours in the vagina. In emergency a soft towel, handkerchief, strips of cotton cloth and a roller bandage may be used for a tampon. 4. *The treatment of neglected abortion* is to clean out the uterus with the finger or dull wire curette and use carbolyzed douche (5i-Oj). The temperature, if high will soon fall after the curettage and douche.

Chances of error in connection with abortion.—1. Could a woman have an abortion, say, at the end of the third month, and at the end of six months from that time be delivered of a fully-developed living child? Yes, and the explanation is, that one of a pair of twins has been cast off and the other has gone to full term. 2. A woman has an abortion and the fetus is cast off with all its membranes entire. In a month from the date of the abortion the woman suddenly dies in collapse. An examination shows that in addition to the fetus in the uterus there has been an extra-uterine one, and the fatal result was due to rupture of the Fallopian tube. 3. A woman has an abortion and the fetus is cast off but not all the membranes. The next month the

patient does not menstruate. About the end of the ninth month, the uterus begins to contract, but instead of a living child being delivered, a bucketful of hydatids is cast off. These little cysts developed in the retained membranes. 4. The foetus is cast off with the lower portions of the foetal shell, leaving the remainder of the shell still in the uterus. This may remain for months or years constituting "molar pregnancy."

Artificial Production of Abortion.—Never induce an abortion without first having a consultation.

Indications.—Whenever it is felt that the prolongation of pregnancy is going to destroy the life or intellect, or to permanently ruin the health of a patient, abortion should be brought on.

The methods by which Abortion is brought on. 1. The first method is to introduce a metallic sound into the os-uteri, and push it forcibly through the foetal shell. If there be a brutal and stupid method of producing abortion, it is certainly this. It is the one commonly practiced in criminal abortions. It will kill the foetus, but it may not come away and thereby produce putrefaction and septicæmia. This method should not be used. 2. The second method is to take sponge tents, and introduce them into the os internum. This method should be avoided. 3. Certain drugs, such as ergot, savin, pennyroyal, viscum album, and the root of the cotton plant. No scientific physician would ever think of placing any dependence upon them whatever. 4. The best method and the one which is sure and safe is as follows: Anæsthetize the patient with ether, and place her in the Sims position. Fill the vagina with bichloride solution, (1 to 2,000). Next you catch the cervix with a little tenaculum and dip it below the surface of the bichloride solution. With a divulsor you stretch the cervical canal until you can introduce your finger. You next introduce a glass plug as large as the finger into the cervix. You then pack the vagina with iodoform gauze and then apply a tampon. This is all you have to do. The plug and the tampon may be left in position for thirty-six to forty-eight hours.

You may have to stretch the os again and put in a larger plug. The plug should be an inch and a half in length with a shoulder which prevents its entrance into the uterine cavity.

PRESCRIPTIONS FOR ABORTION.

℞ Tincturæ opii,..℥xx-xxx.

Sig.: Mix with three tablespoonfuls of boiled starch and inject into the rectum. —Parvin.

℞ Misturæ asafœtidæ...℥vii℥.

Sig.: A tablespoonful several times daily. (In habitual abortion.) —Negri.

℞ Tincturæ ferri chloridi.....℥ss.

Potassii chloratis.....℥j.

Syrupi simplicis.....℥j.

Aquæ menthæ piperitæ ad.....℥iv.—M.

Sig.: A dessertspoonful in a wineglassful of water after meals. (When due to fatty degeneration of the placenta.) —Strother.

℞ Auri et sodii chloridi.....gr. iv.

Aquæ destillatæ.....℥j.—M.

Sig.: Six drops in a tablespoonful of water three times daily after meals. (In habitual abortion.) —Martin.

ABSCESS.

A circumscribed collection of pus in any tissue is called an abscess. Pus in a preformed cavity is called empyema. An abscess is always the result of an inflammatory process.

Varieties.—When an abscess forms rapidly it is called acute, hot, or phlegmenous, and its pus is living. When it is of slow formation, it is called chronic, cold, lymphatic or tuberculous, and its pus is dead.

Symptoms.—We may have, 1. History of an injury. 2. Defective nutrition. 3. Rigor or chills. 4. Elevation of temperature. 5. Fluctuation. 6. The five cardinal symptoms of inflammation which are, redness, swelling, heat, pain and loss of function. If the abscess be acute or hot, the pus is thick and creamy, the walls of the cavity are tense, the surrounding tissues are indurated, and there is a tendency to burst at the point of

least resistance. If the abscess be chronic or cold, the pus is thin, serous and gelatinous, the walls are flabby, the surrounding tissues are not indurated.

Causes.—The tendency of late is to regard all acute abscesses as due to a special micro-organism, the staphylococcus pyogenes aureus. Chronic abscess is due to the bacillus tuberculosis.

All varieties may start from injury.

The origin of pus in an abscess is emigration of white corpuscles, proliferation of connective tissue cells, granules of fat, and debris of inflamed tissue floating in serum.

Varieties of Pus.—Pus when thick and creamy is known as "healthy" or laudable pus, or living pus; when thin and watery "puriform fluid" or dead pus; when blood-stained "sanious;" gummy pus in syphilis; and contagious pus in small-pox, gonorrhœa and venereal ulcers.

Diagnosis.—Abscess must be diagnosed from: 1. Hæmatocele. 2. Cyst. 3. Lipoma. 4. Aneurism, and 5. Malignant tumors. Hæmatocele has a rapid growth, evidence of an injury, and no change in the skin. The walls of a cyst are distended by fluid which distinctly outlines it. In fatty tumor or lipoma, the skin is unchanged and may be lifted up from tumor. In aneurism there is a distinct expansile pulsation synchronous with the heart's action. Pressure on the artery above the aneurism diminishes its size, while pressure below increases its size. An aneurism has a rasping sound like sawing wood. The pain of aneurism is very characteristic—sharp and lancinating produced by pressure on nerve.

Use a hypodermic syringe to make the diagnosis. The pain in acute abscess is at first dull and heavy and then throbbing. There is not much pain in a cold abscess.

We speak of an abscess according to its situation, as mammary, lumbar, cerebral, perineal, post-pharyngeal, etc.

Prognosis.—Depends, 1. On the size of the abscess. 2. On its character. 3. On the age of the patient. 4. Situation of the abscess. 5. Condition of the patient, and 6. On its cause.

Treatment.—*Never squeeze an abscess but drain it freely.* An acute abscess should be opened in the most dependent part,

using a sharp bistoury for the purpose; press out gently the accumulated material, wash it with bichloride of mercury (1 to 1,000), insert a drainage tube, and place upon the outside iodoform gauze. We do not open a chronic abscess but aspirate it. Do not allow air to go in. A small amount of pus may be absorbed.

Constitutional Treatment. Give tonics, such as iron, quinine and strychnine together with good nutritious diet and plenty of fresh air.

PRESCRIPTIONS FOR ABSCESS.

R Iodoformi..... 5iij.

Aetheris..... ʒvi.—M.

Sig.: Inject three to five ounces after aspirating the abscess.
(In cold or tubercular abscess.) —Mosetig Moorhof.

R Iodoformi 5ij.

Glycerinæ..... ʒiiss.—M.

Sig.: Inject the abscess cavity, after evacuating the pus. (In cold or tubercular abscess). —Billroth.

R Calcii sulphidi.....gr. ij.

Sacchari lactis.....gr. xx.—M.

In chartulas xx. div. Sig.: Take one powder every hour or two.
—Ringer.

R Emplastrum belladonnæ.....

Sig.: Apply to abscess to relieve pain. —Bartholow.

R Potassii permanganatis 5j.

Aquæ destillatæ.....Oj.—M.

Sig.: Apply to correct the fetor of abscess. —Bartholow.

R Tincturæ iodi ʒij.

Sig.: Apply as counter-irritant, and after pus is evacuated apply to the sac. —Bartholow.

Use ether spray to produce local anæsthesia, for opening abscesses.

ACIDITY.

Acidity is not a disease, but a symptom. As a symptom it has no special diagnostic value, for it is met with both in functional and in organic disease of the stomach.

Excessive acidity occurs from various causes. The gastric juice may be secreted in large quantities, or it may contain an abnormal amount of acid.

But excessive acidity is far more frequently due to the decomposition of food, and to a process of fermentation dependent rather upon scarcity than over-abundance of this juice. In this case it manifests itself only after meals. At the same time carbonic acid gas may be generated, causing great distension and eructations, or belching of sour liquid.

Treatment.—Acids, given on an empty stomach, check the secretion of the acid gastric juice; given on a full stomach, they render its contents more acid; hence, if there is an excess of acid secreted by the stomach, they should be given before meals, in small doses and well diluted; while, if there is too little acid secreted, they may be given after meals, to supply the deficiency.

PRESCRIPTIONS FOR ACIDITY.

R Acidi hydrochlorici diluti.....3j.

Sig.: Ten drops in water twenty minutes before meals.

R Tincturæ nucis vomicæ.....3j.

Sig.: Five drops in water fifteen minute before meals.—Ringer.

R Sodii bicarbonatis3ij.

In pulveres no xii. div.

Sig.: A powder in a wineglassful of water after meals.

—Alonzo Clark.

R Sodii bicarbonatis.....3j.

Pulveris rhei.....3ss.

Spiriti menthæ piperitæ.....3ij.

Aquæ—q. s.—ad.....3iv.—M.

Sig.: A tablespoonful after meals. (For acidity, combined with constipation).
—Bellevue Hospital.

℞ Pulveris ipecac.....gr. ss.
 Pulveris rheigr. ij.
 Sodii bicarbonatis.....gr. xij.
 In pulveres no xii. dividenda.

Sig.: One powder every four to six hours to an infant one year old. —J. Lewis Smith.

Alkalies after meals are only palliative.

℞ Glycerini3iv.
 Acidi tannici.....3ij.—M.

Sig.: A teaspoonful before, with, or after meals. —Bartholow.

ACNE.

Acne, called also *Acne Vulgaris*, or *Varus*, is an inflammation of the sebaceous follicles and glands, the result of accumulation and retention in them of sebaceous matter. If the sebaceous matter be retained without inflammation, the surface becomes studded with black specks, and the affection is known under the name of *comedones*, or *black-heads*. But, sooner or later, the sebum plugs give rise to irritation, act as thorns in the flesh, and excite inflammation and suppuration in the surrounding tissues, and the patient is said to have acne.

Acne is likely to occur in those whose skins are sensitive, or whose general health is disordered. It is a frequent affection and is resented by the upper classes of society on account of its disfigurement. It is rarely met with before puberty—usually begins between the ages of 15 and 25. Some thought that there was a connection between acne and the organs of generation, as a marriage would sometimes moderate its violence, and Rigler very rarely saw acne in eunuchs; but Hebra said, "I cannot agree with Plenck's dictum, '*Matrimonium varos curat*,' but would rather say, '*Tempus varos curat*.'"

Symptoms.—Acne affects most frequently the face, neck, shoulders, back and chest. The starting points of the eruption is the accumulation of hardened plugs of sebum in the sebaceous follicles (*comedones*) which are black upon the surface, owing to admixture with particles of dust. Sometimes a small nodule surrounds each follicle, and we have *acne punctata*; sometimes the nodule becomes pustular, and we have *acne pustulosa*; some-

times there is a decided induration, or tubercle, *acne indurata*. In severe cases some of the sebaceous glands are apt to be the seat of distinct abscesses. If these inflammatory centres are allowed to run their course unchecked, they leave cicatrices which resemble the pits of small-pox, and as the eruption tends to occur in successive crops, in time the disfigurement may be considerable, hence the disease, though trivial, should be treated. A burning heat is occasionally complained of, and itching is common.

Diagnosis.—Tar acne may be mistaken for acne, but the history of the patient having been exposed to the influence of tarry preparations, or their external use, would make the diagnosis. In tar acne there is a black speck in the center of each nodule, as in acne. The eruptions which frequently occur in those who are taking the bromides or iodides sometimes resemble that of acne, but in them there is a history of the taking of one of these drugs, and there is an absence of black specks in the centre of the nodules. Syphilitic eruptions may sometimes be mistaken for acne; but in the former the eruption commences after the poison enters the system, usually affects all parts, is more or less coppery in chronic stage, is often in circles or segments of circles, ulceration is common, itching absent always in early syphilis, eruption easily removed by anti-syphilitic treatment; in the latter, the eruption commences between puberty and 25, is limited to face, chest and back, is bright red, is never in circles or segments of circles, no tendency to ulceration, itching often present, eruption hard to remove by any kind of treatment.

Treatment.—Is both constitutional and local. If the patient is strumous, phosphorous and cod-liver oil in full doses should be given. If the eruption appears in an aggravated form, arsenic should be given. If suppuration is a prominent feature, the sulphide of calcium may be tried.

The local treatment is the most important: 1. Press out the sebum plugs (comedones). 2. Bathe the affected parts every night and morning, with water as hot as can be borne, for ten minutes, and afterwards apply friction with rough towel. 3.

e indurata has been cured by applications of galvanism, both local and central.

PRESCRIPTIONS FOR ACNE.

R Syrupi hypophos comp..... ℥viiij .

Sig.: A teaspoonful after each meal. (Acne indurata).

—Bartholow.

R Liquor potassii arsenitis..... ℥vj .

Sig.: Three drops in water after each meal.

R Liquor potassæ..... ℥j .

Aquæ Rosæ..... ℥iv .—M.

Sig.: Apply with a soft sponge twice daily. Use mutton suet to face afterwards.

—Bartholow.

R Calcii sulphidi.....gr. xv.

Sacchari lactis..... ℥iij .

In chartulas no Lx. div.....—M.

Sig.: Take one powder three times a day.

—Anderson.

R Sulphuris iodidi ℥ss .

Adipis..... ℥j .—M.

Sig.: Use freely over the eruption night and morning. (In acne indurata and rosacea.)

—Ringer.

R Sulphuris..... ℥j .

Glycerini (Price)..... ℥j .

Cold cream..... ℥j .—M.

Sig.: To be applied firmly every night short of causing pain or inflammation.

—Anderson.

R Potassii sulphureti.....

Zinci sulphatis... aa..... ℥j .

Aquæ rosæ..... ℥j .—M.

Sig.: Apply to the face on muslin twice a day and wash the face with tar soap.

—Anderson.

R Lactis sulphuris.....

Glycerini.....

Spirits vini rectificati.....

Potassii carbonatis.....

Aetheris sulphurici.....aa..... ℥ss .—M.

Sig.: Apply to face at bed-time.

—Teissl.

R Sulphuris precipitatæ.....℥ij.
 Camphor.....gr. x.
 Gum mimosa.....gr. xx.
 Aquæ calcis.....
 Aquæ rosæ.....aa.....℥iij.—M.

Sig.: Shake the bottle. Apply at bed-time and in the morning
 remove the sulphur without wetting the skin. —Kummerfeld.

R Hydrargyri chloridi corrosivi.....gr. xx.
 Glycerini℥ss.
 Spiriti vini rectificati.....℥vij.
 Spiriti rosmarini.....℥iv.—M.

Sig.: Apply to face. —Bartholow.

R Hydrargyri iodidi viridis.....gr. x.
 Adipis.....℥j.—M.

Sig.: Apply to face. —Bartholow.

R Hydrargyri iodidi rubri.....gr. v.
 Adipis℥j.—M.

Sig.: Apply to face. —Bartholow.

R Glycerini℥j.

Sig.: Half teaspoonful after meals. —Bartholow.

R Sulphuris.....℥j.
 Glycerini℥j.
 Aquæ rosæ.....℥viij.—M.

Sig.: Apply to face night and morning. —Ringer.

R Hydrargyri perchloridi℥j.
 Aquæ destillatæ.....℥iv.
 Ovorum xxiv albumen.....
 Succu citri.....℥iij.
 Sacchari℥viij.—M.

Sig.: Apply to the face. —Hebra.

The above is a cosmetic lotion much used by the Orientals
 as a beautifier of the skin, and is often of use in acne.

R Potassii acetatis.....℥iv.
 Tincturæ nucis vomicæ.....℥ij.
 Extracti rumicis fluidi, ad.....℥iv.—M.

Sig.: One teaspoonful, well diluted after meals. —Bulkley.

R Potassii acetatis.....3j.
 Acidi acetici.....3ss.
 Spiriti ætheris nitrosi.....3iss.
 Extracti taraxaci fluidi.....3ij.—M.

Sig.: A teaspoonful before meals in water. —Bulkley.

R Sulphuris præcipitatae.....3v.
 Glycerini3iss.
 Spiriti camphoræ.....3j.
 Aquæ.....3iv.—M.

Sig.: Apply with a brush to the affected part before retiring
 at night. —Lailler.

R Sulphuris præcipitatae.....3j.
 Glycerinæ.....3j.
 Spiriti vini rectificati.....3ss.
 Aquæ rosæ.....ad.....3iv.—M.

Ft. lotis.

Sig.: To be painted on at night after steaming the face and washing it with sand soap. To be washed off in the morning with warm gruel, and the face powdered with the following:

R Zinci oleatis.....
 Pulveris talc.....aa.....3j.—M.

Sig.: To be dusted on every morning. —Jamieson.

ACNE ROSACEA.

Called also Rosacea, or Copper-nose, is a very common affection, but not so common as ordinary acne.

Causes.—Intemperance is the most frequent cause in males. Debility is the usual cause in females. Those whose faces are exposed to great cold or heat, as cab-drivers, bakers and cooks, are liable to have copper-nose. In males the disease usually appears about middle-life; in females about puberty, or the menopause.

Symptoms.—The eruption always makes its appearance upon the face, as the nose, chin, cheeks or brow. The symptoms may be divided into three stages or varieties. In the first, there is simply dilatation of the small vessels and capillaries, with new formation of vessels. In the second, redness of the surface

makes its appearance, which is at first congestive and transitory, but finally becomes permanent, and slight desquamation takes place. The skin has a dusky tint, especially after meals and in cold weather. In the third variety, owing to cell infiltration and the new formation of connective tissue, hypertrophy of the tissues of the skin is apparent, and the skin has a thickened and coarse appearance.

Hebra describes the brandy-face and the wine-face. The brandy-face is frequently confined to the nose, where it dilates the blood-vessels, and the skin between is healthy. The wine-face is of a dark red color, and the skin has a solid redness, and the whole face has a bloated appearance.

Treatment.—Constitutional treatment is very important. In cases of debility, a generous diet, tonics, especially arsenic, are indicated. The local treatment is even more important. If the blood vessels are very much dilated, they should be slit open, or punctured at each end, and touched with caustic, or they may be obliterated by electrolysis. The finest cambric needle, attached to the negative pole of the galvanic battery, is inserted into the lumen of the vessel, or perpendicular to the vessel at several points if a long one, and six to ten cells turned on, until the proper electrolytic action is developed.

PRESCRIPTIONS FOR COPPER-NOSE.

℞ Hydrargyri.....℥iv.
Terebinth commun.....℥ij.
Cere flavæ℥iij.
Empl. plumbi.....℥iss.—M.

Ft. unguent. (See Acne Vulgaris).

ADDISON'S DISEASE.

Addison's disease is an affection of the suprarenal capsulae. It is sometimes called the bronzed skin disease.

Symptoms.—Extreme languor, muscles flabby, the pulse feeble, indigestion, anorexia and nausea, sometimes vomiting after eating. The skin is pigmented, and presents the color of a mulatto.

Prognosis.—It is an incurable disease. Its duration varies from one to five years.

Treatment.—Sirup of the iodide of iron, cod-liver oil, chloride of calcium, quinia, and arsenic may be tried. Faradism and galvanism have been proposed by Dr. Rockwell.

Addison's disease is thought to be tuberculosis of the supra-renal bodies.

AFTER-PAINS.

The contractions of the uterus in the first few days after the birth of the child are the causes of what are termed after-pains. They may last four days, and are more pronounced in multiparæ than in primiparæ. They are to be regarded as a normal and favorable event. Where the uterus has been over-distended, as in twin pregnancies and hydramnios, the after-pains are especially severe. Suckling the infant produces reflex contractions of a somewhat severe character.

PRESCRIPTIONS FOR AFTER-PAINS.

R Morphinae acetatis.....gr. i.
 Extracti digitalis fluidi.....℥j.
 Spiriti Mindereri5j —M.

Sig.: One dose. Repeat if necessary.

R Extracti ergotæ fluidi.....5iij.
 Extracti digitalis fluidi.....℥xxiv.
 Quininae Sulphatis.....gr. xxiv.—M.

Sig.: Fifteen drops three times daily. (To aid the process of involution). The quinine may be given in gr. ii. doses, if preferred.
 —Sloan Maternity.

R Chloral Hydratis.....gr. xv.

Sig.: One dose. May be repeated if necessary.

R Camphorægr. x.
 Morphinaegr. i.—M.

Sig.: One dose.

—Bartholow.

AGALACTIA.

Agalactia is imperfect lactation.

PRESCRIPTIONS FOR AGALACTIA.

R Extracti pilocarpi fluidi.....℥ij.

Sig.: A teaspoonful two or three times daily. —Bartholow.

R Decocti gossypiiOj.

Sig.: A wineglassful every half hour.—Phillips.

AGUE. (See Intermittent Fever).**AGUE-CAKE.**

Is an enlargement of the spleen from malaria.

Treatment.—Besides quinine in ordinary doses, there is no remedy more efficacious than the ointment of the red iodide of mercury rubbed in daily over the splenic region in the sunshine, until soreness of the skin compels a suspension.—Bartholow.

ALBUMINURIA.

Is simply albumen in the urine. It is not a disease, but a symptom. The existence of albuminuria is not proof positive of kidney disease. Albumen may be found in the urine in the course of a great many diseases. It is frequently found in the urine of persons who are apparently in perfect health. As a rule, albumen found in the urine denotes some kidney change.

PRESCRIPTIONS FOR ALBUMINURIA.

R Sodii iodidi..... gr. xv.

Sodii phosphatis.....℥ss.

Sodii chloridi℥iij.

Aquæ—q. s.—add ft. sol.....—M.

Sig.: To be taken in the course of the twenty-four hours.

—Semmola.

R Olei erigerontis3ss.

Sig.: Five drops on a lump of sugar every three or four hours.
(In the chronic forms). —Bartholow.

R Auri et sodii chloridi.....gr. iij.
Hydrargyri chloridi corrosivi.....gr. v.
Extracti gentianæ.....q.s.—M.

Ft. massa et in pil. no. lx. div.

Sig.: One pill morning and evening. —Bartholow.

R Acidi gallici.....3i-ij.
Acidi sulphurici diluti.....3ss.
Tincturæ lupuli.....3j.
Infusi lupuli—add3vj.—M.

Sig.: A tablespoonful thrice a day. (If urine is smoky).

—Aitken.

R Misturæ ferri et ammonii acetatis.3vj.
(U. S. P.)

Sig.: Two teaspoonfuls, well diluted, thrice daily. —Basham.

R Ferri sulphatis.....gr. xv.
Magnesii sulphatis3ij.
Potassii bicarbonatis3iij.
Infusi buchu.....3viiij.—M.

Sig.: A tablespoonful once or twice a day in a tumblerful or
water. (When constipation exists). —Fothergill.

The skim-milk treatment of albuminuria is a success.

—Donkin.

The butter-milk cure may be substituted for the milk-cure
in cases of stomach disease and in albuminuria.—Bartholow.

ALBINISM.

Is defective pigmentation in the skin, hair and eyes. The pigment of the skin is in the mucous layer of the epidermis. In this condition there is congenital absence of the coloring matter, and the skin is milky white, the hair white, long, fine, and silky, and the iris is rose colored, the pupil being red.

There is usually intolerance of light and the Albino walks with the head downwards.

This deformity is met with in all races, but it occurs most among the negroes of the South.

It demands no treatment.

ALCOHOLISM.

Is the physical and mental changes induced by alcohol. It may be acute or chronic.

Mania a potu is acute alcoholic delirium.

Delirium tremens is a delirium with trembling occurring in the course of chronic alcoholism.

Symptoms.—The symptoms are familiar to all. In the chronic form the appetite declines, the stomach becomes intolerant of food, and vomiting occurs. The old alcoholic suffers in the early morning before the morning dram. He strains and retches, and after great anguish, brings up only some glairy mucus and a little greenish matter. His memory grows weaker, his moral sense is blunted, he becomes morose and irritable, has headache, ringing in the ears, attacks of dizziness or vertigo, his vision grows dull, numbness, tingling, trembling, and paresis of muscles occur. He also becomes wakeful and nervous. Liver and kidney trouble supervene with ascites and puffiness of face.

Treatment.—Withdraw the stimulant, be careful with his diet, give tonics such as quinine, tincture of nux vomica, etc.

PRESCRIPTIONS FOR ALCOHOLISM.

R Potasii bromidi.....3j.

Sig.: One dose. Repeat every four to six hours if necessary.
(For the horrors.) —Bartholow.

R Tincturæ gentianæ comp..... ..

Tincturæ calumbæ comp—aa.....3ij.

Tincturæ nucis vomicæ.....3iss.—M.

Sig.: A dessertspoonful before each meal. —Loomis.

R Strychniæ sulphatis.....gr. j.

Aqua font.....3j.—M.

Sig.: Five minims increased cautiously to twenty minims hypodermically twice daily. (In both acute and chronic forms.)

—Dobronravoff.

R Sol. nitro-glycerine (1 per cent)..3ij.

Sig.: One drop every two hours. (In acute form, with cerebral anæmia and intense depression.) —Van Goidtsnoven.

- R** Spiriti ammonii aromatici.....3ij.
 Tincturæ camphoræ3iss.
 Tincturæ hyoscyami.....3iiss.
 Spiriti lavandulæ comp. q. s. add3ij.—M.

Sig.: A teaspoonful every hour until relieved. Then give

- R** Pulveris capsici..... gr. ij.
 Quininae sulphatis.....gr. iij.—M.

Ft. pulv. no. i.

Sig.: To be taken before each meal for several days. —Aitken.

- R** Extracti lupulinæ fluidi.....
 Tincturæ capsici—aa.....3j.—M.

Sig.: One or two teaspoonfuls as necessary. (Best substitute for alcoholic stimulants.) —Bartholow.

- R** Liquoris potassii arsenitis.....3ss.—M.

Sig.: A half drop every half hour, for six or eight doses. (Vomiting of alcoholics.) —A. A. Smith.

- R** Sodii bromidi.....3ss.
 Chloral hydratis.....3iiss.
 Syrupi aurantii cort.....3ss.
 Aquæ, ad.....3iv.—M.

Sig.: A tablespoonful at night. Repeat if necessary. (For sleeplessness.) —Aitken.

Give opium and chloral very cautiously to old alcoholics.

For the "alcoholic paralysis," or partial paraplegia use faradism and galvanism.

ALOPECIA.

Is baldness or loss of hair or defective growth. It may be congenital or acquired. It is a common thing for children to be born with very little hair, but it soon begins to grow; in rare cases it never makes its appearance.

Congenital alopecia has also been observed in the lower animals, especially in a race of horses found in Little Thibet, on whose hide not a trace of hair can be discovered; also in a race of African dogs and hogs.

Treatment.—Is both constitutional and local. Cod-liver oil and tonics, especially nerve tonics, as strychnia, phosphorus, and above all arsenic are usually indicated.

The local treatment resolves itself into the use of remedies to stimulate the hair follicles.

PRESCRIPTIONS FOR ALOPECIA.

- R** Tincturæ cantharidis.....3ss.
 Olei ricini.....3iv.—M.
 Sig.: Rub well into the roots of the hair night and morning.
 —Waring.
- R** Tincturæ cantharidis.....3iss.
 Tincturæ capisici.....℥℥.xx.
 Glycerinæ.....3ss.
 Spiriti odoratæ—add.....3vj.—M.
 Sig.: Apply to head two or three times daily. — Gross
- R** Hydrargyri perchloridi.....gr. xij.
 Glycerini.....3vj.
 Spiriti rectificati.....3iij.
 Aquæ destillatæ—add.....3vj.
 Olei rosæ.....℥℥.j.—M.
 Ft. lotio. Apply to scalp night and morning. —Anderson.
- R** Liquoris carbonis detergentis.....3j.
 Glycerini (Price).....3vj.
 Aquæ destillatæ.....3iv.—M.
 Sig.: Sponge the scalp night and morning. —Anderson.
- R** Pulveris cantharidis.....3j
 Glycerini (Price).....3j.
 Unguenti simplicis.....5vj.—M.
 Sig.: Apply firmly to the scalp night and morning.
 —Anderson.
- R** Tincturæ macis.....3iss.
 Olei olivæ—add.....3ij.—M.
 Sig.: Apply two or three times daily to affected spots.
 —Hebra.
- R** Quininæ sulphatis.....3iss.
 Spiriti vini rectificati.....3iv.
 Tincturæ capsici.....
 Tincturæ cantharidis.....
 Spiriti ammonii aromatici—aa...3ss.
 Glycerini.....3iv.
 Aquæ q. s.—add.....Oj.—M.
 Sig.: Apply locally. —Brinton.

Alopecia depending on Syphilis, Eczema and Psoriasis may be cured by the proper treatment for those affections.

Pilocarpus is the most efficient remedy for alopecia which we possess.—Bartholow.

℞ Extracti pilocarpi fluidi3j. ✓
Tincturæ cantharidis.....3ss.
Linimenti saponis3iiss.—M.

Sig.: The scalp must be well rubbed with this lotion daily.
—Bartholow.

AMAUROSIS. (Functional.)

Amaurosis is partial or complete blindness. Amblyopia is impairment of vision. Since the ophthalmoscope has come into use, making the interior of the globe as accessible to our sight as the exterior, these terms have fallen into comparative disuse, and are used to designate conditions whose pathology is not known (functional).

Causes.—1. Traumatic. 2. By lightning. 3. Hemorrhage. 4. Toxic, such as lead, osmic acid, silver and mercury, quinine, and salicylic acid. Alcohol and tobacco, which excite a peculiar partial neuritis, may cause amaurosis or amblyopia. 5. Uræmic. 6. Diabetic. 7. Hysterical. 8. Migraine. 9. Reflex.

Treatment.—Depends on the cause. For toxic causes, suitable antidotes and abstinence suggest themselves. Galvanization and faradization may be tried. Amaurosis of a functional kind, from lead, tobacco and alcohol, may be cured by strychnine.

PRESCRIPTIONS FOR AMAUROSIS.

℞ Strychniæ sulphatis.....gr. j.
Alcoholis5j.
Aque destillatæ—ad3iv.—M.

Sig.: A teaspoonful thrice daily before meals. —Nagel.

According to Coursserant, there is no remedy comparable to pilocarpine in the amblyopia of alcoholism and of tobacco abuse. Dose, gr. $\frac{1}{2}$ —gr. ss.

AMENORRHŒA.

Is abnormal suppression or absence of the menses. Primary amenorrhœa, called also *emansio mensium*, is where menstruation has never occurred. Secondary or accidental amenorrhœa has been called *suppressio mensium*.

Causes.—Amenorrhœa is, more frequently than to any other cause, due to anæmia of the ovaries, consecutive to chlorosis or

general anæmia, and dysmenorrhœa may depend, in one of its forms, at least, upon the same condition of the blood.—Bartholow.

When the menses are absent at puberty it may be due to atresia of the uterus, vagina or vulva, or to bad hygienic surroundings, or to overwork at school. After the menses have become established, they may cease entirely from impoverishment of the blood, from debility resulting from a chronic disease or following an acute illness.

Anæmia, chlorosis, Bright's disease, diabetes, cancerous and malarial cachexia, and pulmonary tuberculosis are all potent in producing amenorrhœa.

Menstruation may be suppressed from some sudden emotion, anxiety, and from taking cold.

Symptoms.—Absence of the monthly flow is of course the chief sign. There may be headache, fever, pain in the chest and pelvis, acne, eczema, herpes, and urticaria.

Science has on record some curious examples what may be called substituted secretions.

Jones reports the case of a young woman in whom menstruation was checked apparently from sudden chilling, who then suffered from amenorrhœa, and for five years had, instead of the menstrual flow, an abundant flow of milk from the breasts which lasted for thirty-six hours. Periodical diarrhœa for three days, or leucorrhœa may replace the normal flow (Pozzi).

Hæmoptysis (spitting blood), hæmatemesis (vomiting blood), epistaxis (nose bleed), and rectal hemorrhages may replace the normal flow, and this is known as vicarious or ectopic menstruation.

Treatment.—Depends on the cause. Where atresia exists, an operation is necessary. If the amenorrhœa be due to bad hygiene, or over-study, or poor health, correct these conditions. Pozzi says that it is a mistake to suppose that amenorrhœa calls for special medication supposed to have an elective action upon the uterine mucous membrane. Iron and aloes, and saline purgatives may be given in certain cases. Permanganate of potassium is said to be almost a specific. Apiol is sometimes of service. Mustard foot baths and mustard plasters to the thighs and hypogastrium, and the hot sitz-bath are important aids.

Tonics and good food must be given. Electricity (faradic) with one pole upon the lumbar region and the other externally over the site of the uterus has given good results (Rockwell).

During pregnancy and lactation menstruation ceases; it returns only when the excess of nutritive material is no longer required for these purposes.

Menstruation may then be considered a safety valve; its absence indicates a lowering of nutrition when it is not the result of pregnancy.

PRESCRIPTIONS FOR AMENORRHŒA.

R Tincturæ aconiti radicis.....3ss.

Sig.: One drop every hour. (When checked by cold.)—Ringer.

R Potassii permanganatis.....3j

Ft. in no. xxx pellets.

Sig.: One three times daily after meals followed by a glass of water. (Begin one week before the expected period.) —Bartholow.

R Auri et sodii chloridi.....gr. iij

Aquæ.....3viij.—M.

Sig.: A teaspoonful after meals. —Bartholow.

R Extracti hydropiperis fluidi...3iv.

Sig.: Thirty minims four times a day, for a week before the menses ought to appear, when due to functional inactivity or torpor of the uterine system.

Bartholow can confirm the statement of Eberle, who reports that "with no other remedy or mode of treatment has he been so successful as with this," in amenorrhœa.

R Apiol (parsley-camphor).....3j.

Sig.: Six drops morning and evening for five days before the expected menstrual period. (When torpor of the ovaries and uterus exist.) —Biddle.

R Terebinthinæ albæ.....

Pulveris aloes.....

Ferri sulphatis exsic—aa.....gr. xx.—M.

Ft. massa et in pil. no. xx div.

Sig.: One thrice daily. —Parvin.

℞ Extracti aloes aq.....3j.
 Ferri sulphatis exsic.....3ij.
 Asafœtidæ3iv.—M.

Ft. massa et in pil. no. 100 div.

Sig.: One pill after each meal, gradually increased to three.

—Goodell.

℞ Tincturæ ferri chloridi.....3iij.
 Tincturæ cantharidis.....3j.
 Tincturæ guaiaci ammonii.....3iss.
 Tincturæ aloes.....3ss.
 Syrupi—q. s., add.....3vj.—M.

Sig.: A teaspoonful thrice daily.

—Dewees.

ANÆMIA.

Is a morbid condition from diminution of blood or its nutritive constituents. Anæmia may be only a symptom of some other disease. It may be acute or chronic. Acute anæmia is the result of sudden and excessive loss of blood, as from wounds of arteries, post partum hæmorrhage, and fevers. Chronic anæmia may result from many forms of chronic diseases, as Bright's disease, malignant growths, tuberculosis, etc. Anæmia may also be caused by defective assimilation, an insufficient supply of food, frequent repetition of the sexual orgasm, profuse menstrual flow, prolonged lactation, pregnancy, poison in the blood from lead, malaria, etc.

Symptoms.—The patient is weak and pale. His lips and tongue have lost their red color. The eye is pearly. His pulse is feeble, but generally accelerated. The appetite is deficient or depraved. The bowels are apt to be costive. Exercise induces great fatigue, shortness of breath and palpitation (DaCosta). There is mental depression. The hands and feet are always cold. Anæmic females complain of a pain in the left side and a burning sensation on top of the head. Over the jugulars, particularly the right, there is heard a continuous venous hum (Loomis).

Prognosis.—Depends upon the cause of the anæmia. It is usually favorable.

Treatment.—The causes of anæmia are to be ascertained, and, if possible, removed. Good food is the first requisite. The appetite and digestion should be promoted by quinia and other tonic remedies. Exercise in the open air, daily sponging of the body, and sea-bathing have a favorable influence. Iron is the one drug that best combats anæmia (Loomis). It should be given after meals. Arsenic is another remedy often of much efficacy in the treatment of anæmia (Flint). It should be given in small doses for a long time. Loomis says that alcohol is food to anæmic patients, and that Burgundy, Madeira, and rich wines are to be preferred; but malt liquors are often more beneficial. Cod-liver oil, and the syrup of the lacto-phosphate of lime are of great service. The physician should encourage the patient. Central galvanization, and general faradization are of use to stimulate the functions of organic life (Bartholow).

PRESCRIPTIONS FOR ANÆMIA.

- R** Quininæ sulphatisgr. xx.
 Ferri sulphatis exsiccata.....gr. xl.
 Strychniæ sulphatis.....gr. ss.—M.
 Ft. massa et in pil no xx. div.
 Sig.: One pill thrice daily. —Bartholow.
- R** Tincturæ ferri chloridi.....3iv.
 Acidi phosphorici diluti.....3vj.
 Spiriti limonis.....3ij.
 Syrupi—q. s. add.....3vj.—M.
 Sig.: A dessertspoonful in water after meals. —Goodell.
- R** Hydrargyri chloridi corrosivi.....gr. i-ij
 Liquoris arsenici chloridi.....3j
 Tincturæ ferri chloridi3iv.
 Acidi hydrochlorici diluti3iv.
 Syrupi.....3ij.
 Aquæ—add3vj.—M.
 Sig.: A dessertspoonful in a wineglassful of water after meals.
 —A. H. Smith.
- R** Ferri sulphatis exsiccata.....
 Potassii carbonatis aa..... 3j.
 Syrupi—q. s., ut. ft. massa.....—M.
 Ft. massa et in pil no. xxiv. div.
 Sig.: One pill after meals. —Bland.

R *Liquoris potassii arsenitis*.....3ss.

Tincturæ gentianæ compositæ3ivss.—M.

Sig.: Half teaspoonful after each meal. (Small doses of iron may be given with the above).

R *Syrupi calcii lacto-phosphatis*.....3iv.

Liquoris potassii arsenitis.....3j—M.

Sig.: A teaspoonful three times daily. (In anæmia of lactation and of suppuration). —Bartholow.

ANEURISM.

Is a tumor, or sac, containing blood which communicates with the interior of an artery. Its walls are formed of the coats of an artery.

Causes.—The aorta is the favorite site of aneurisms, because it is subjected to great strain. Powerful, muscular effort, syphilis, chronic arteritis, are the chief causes. Degeneration of the vessel walls, overaction of the heart, as in hypertrophy, gout, rheumatism and alcohol may cause aneurism. Exciting causes are: external wounds, fractures and dislocations, and sprains. It occurs most frequently between 30 and 50.

Symptoms.—The earliest symptom of thoracic aneurism is pain. This may be a fixed pain, almost constant, and felt in one spot under the sternum, lancinating and tensive in character, shooting up to the neck and shoulders, down the arm to the elbows; or it is felt in the back and shoots around the chest. At times the attacks of pain are most severe, and demand the use of active anodynes (Bartholow). If erosion of vertebræ, sternum, or ribs occurs, there is a peculiar, constant "boring" pain. Pressure of the aneurism on the recurrent laryngeal nerves causes dyspnoea and the voice becomes husky. Pressure on the pneumogastric may cause vomiting and pyrosis. Pressure on the pulmonary plexus gives rise to a harsh, metallic, "brassy" cough. Pressure on the cervical sympathetic causes contraction of the pupil on the affected side, and irritation causes dilation of the pupil (Loomis). Pressure on the external jugular causes the head and neck to become turgid on that side. Pressure on the trachea causes dyspnoea and a stridulous cough (with no

expectoration) like a nervous cough. Pressure on the thoracic duct will cause mal-assimilation, wasting and inanition.

The symptoms of aneurisms in general are: 1. Expansile pulsation. 2. Pressure on the artery above destroys the pulsation and diminishes the size of the aneurism. 3. Aneurismal bruit—a rasping sound, like sawing wood. 4. Pain, due to pressure on the sensory nerves. The following tumors may be mistaken for aneurisms: 1. Pulsating sarcoma and soft vascular carcinoma. 2. Abscess lying on an artery. 3. Enlarged glands lying on an artery.

A clean hypodermic needle may be thrust into the sac or tumor to make the diagnosis positive (Bartholow).

Prognosis.—Unfavorable.

Treatment.—Is both medical and surgical. Absolute rest is the first essential. The diet must be nutritive but unstimulating. Iodide of potassium and ergot are the only drugs that have stood the test of time (Loomis). Morphine must be given for the pain. For cases amenable to surgical treatment, see works on surgery.

PRESCRIPTIONS FOR ANEURISM.

R Barii chloridi... ..gr. xvij.
Aque.....3j.—M.

Sig.: Six drops in a tablespoonful of water three times daily after meals, for four or five months. —Flint.

R Potassii iodidi..... (grs. xv.—3ss.)

Three or four times a day. (This relieves pain and promotes coagulation of blood in the sac). —Bartholow.

R Antipyrin.....3iss.
Syrupi tolutan.....3iss.
Aque—add.....3iij.—M.

Sig.: A tablespoonful at intervals of one to four hours until relieved. (For cardiac pain). —Sée.

R Potassii iodidi.....3ss.
Syrupi simplicis.....3j.
Aque menthæ piperitæ—ad.....3iij.—M.

Sig.: A teaspoonful three times daily, gradually increased to three teaspoonfuls, but diminished on any increase of pulse rate. —Balfour.

ANASARCA.

Is not a disease but a symptom. It is a universal accumulation of serous fluid in the areolar tissue. *Edema* is a localized collection of serum in the same tissue. These terms, therefore, differ in nothing but extent. (For treatment of these conditions see dropsy.)

ANGINA PECTORIS.

Is a neurosis of the heart characterized by pain, usually intense, burning, tearing or lancinating in character, in the præcordial region, radiating into the back, left shoulder and down the left arm, and accompanied by a feeling of constriction of the chest, and a strong sense of impending death. It is frequently associated with organic disease of the heart (Bartholow and Loomis).

Treatment.—The affection is paroxysmal. There is a sudden indescribable anguish, or "heart-pang" with a sense of suffocation, pale face, cold sweat, arterial tension high, action of heart disturbed. The paroxysms may last a few seconds only, or for hours, or even days (Bartholow and Loomis).

Prognosis.—Unfavorable.

Treatment. All causes of disturbance of the heart action, as tobacco-smoking, alcohol, over-ingestion of food, and excitement must be removed.

Five drops of nitrite of amyl should be inhaled from handkerchief during the paroxysm.

Morphine hypodermically for pain.

Nitro-glycerine to prevent the attacks. Fowler's solution cod-liver oil and the hypophosphites should be given. Electrolysis has been found useful (Bartholow, Loomis and Flint).

PRESCRIPTIONS FOR ANGINA PECTORIS.

R *Liquoris potassii arsenitis*.....3j.

Sig.: Ten drops three times a day after meals. (Given during the interval.) —Bartholow

R *Amyl nitritis*.....5ij.

Sig.: Two to ten drops on handkerchief for inhalation.

— Brunton

R Sol. nitro-glycerine (1 per cent.).. ʒss.

Sig.: One-half to two drops internally. (When pallor of face exists.) —Pepper.

R Antipyrin..... ʒj.

Syrupi tolutan..... ʒj.

Aquæ—add..... ʒij.—M.

Sig.: A tablespoonful at intervals of one to four hours until relieved. —See.

ANTHRAX.

Commonly known as Carbuncle is a circumscribed, indurated, inflammation of the skin and cellular tissues. It is larger than a boil, and forms on the back or neck, sometimes on the face and buttock. Carbuncle is a far more serious affection than a boil, and occurs generally in men over 45. The pain is severe, sometimes intense; of a heavy, aching, throbbing, stinging, burning character. The inflamed area shows no disposition to become accuminated like a boil, but maintains its flat and very hard character. Little ulcers form on the dusky red skin which give it a sieve-like appearance, so numerous are the openings, and from these a whitish discharge exudes. Carbuncle, attacking the upper lip, is found to be an extremely fatal form of the disease, and kills by the onset of pyæmia (Flint and Anderson).

Causes.—Poisonous, or irritating materials introduced into the skin; prolonged exposure of the skin to a scorching heat; low state of the nervous system and of the general health, predispose to their occurrence (Flint and Anderson).

Treatment.—Begin treatment with a calomel purge. Give tonics, such as quinine and iron in full doses. Morphine may be needed to quiet pain. Apply heat in the form of a poultice with acetate of lead and opium. Paint with tincture of iodine. Mr. O'Ferral recommends continued pressure by applying collodion to the inflamed skin.

Some authorities advise incision.

PRESCRIPTIONS FOR ANTHRAX.

R Tincturæ ferri chloridi3j.
 Potassii chloratis.....3j.
 Glycerinæ3j.
 Aquæ—add.....3iv.—M

Sig.: A teaspoonful in a wineglassful of water every two hours. —Ringer.

R Lini farinæ.....
 Aquæ bullientis.....aa. q. s.

M. et Ft. cataplasma.

Sig.: Apply as hot as bearable and renew when necessary.

—Rockwell.

Faradization will hasten suppuration.

ANÆSTHESIA.

Is loss of sensation. It is of various degrees. It may be complete, or partial, or a mere benumbing, and may be located in any part of the body. It is a symptom of some organic or functional disease of the central or peripheral nervous system. Large doses of Indian hemp, of lead, or of arsenic may cause anæsthesia. We see it in hysteria, syphilis and rheumatism, and as a result of pressure on nerve trunks, and of disturbances of the circulation and abnormal conditions of the blood. In the parts affected with anæsthesia the nutrition is less active, and there is a feeling of numbness and the temperature lowered (Loomis).

Treatment.—A good nutritious diet and tonics. For the curable cases of cutaneous anæsthesia, faradization is a specific, if any remedy can be said to be a specific for anything (Rockwell). Bartholow recommends strychnine.

ANCHYLOSIS.

Is a bony or fibrous union of the joint ends of bones, causing immobility of the joint. Anchylosis is not a disease of itself, but may be the result of any disease or injury which interferes with the normal functions and motions of a joint. Anchylosis may take place even in a perfectly healthy joint by long-con-

tinued rest. It may be the most favorable termination that can occur in many diseases and accidents of the joints.

If ankylosis is the best result that can be obtained, then the surgeon should see that the elbow is ankylosed at a right angle, as the limb will be more useful, and the knee with the limb perfectly straight (Sayre and Bryant).

Treatment.—If the ankylosis be fibrous, we resort to forcible movement to break up the adhesions. If it be bony, we divide the bone, or cut out a wedge-shaped portion. It may be necessary to divide the tendons before applying force. After breaking up the adhesions in the fibrous variety, passive motion may be resorted to. There is no treatment for bony ankylosis if the limb is already in the best position (Bryant).

APHTHÆ.

Are small white mucous ulcers of the mouth, especially of infants. Aphthous, follicular and croupous stomatitis are other names for this affection. The “aphthæ,” or white ulcers, are found on the internal surface of the lips, cheeks, tongue, gums, etc. The smallest of these patches are not larger than a pin’s head.

Causes.—Indigestion, diarrhœa, unripe fruit, candy and bad hygienic surroundings.

Symptoms.—The constitutional symptoms are slight. The ulcers are painful; the child is fretful; the saliva is increased.

Treatment.—Correct any intestinal disturbance that may exist with small doses of rhubarb and magnesia. Wash the mouth with a weak solution of glycerine and borax, or chlorate of potash. If the ulcers are slow to heal, touch them lightly with nitrate of silver. Bathe the feet in warm water.

PRESCRIPTIONS FOR APHTHÆ.

R Bismuthi subnitratiss.....	3j.	
Sig.: Apply dry to the ulcer.		—Bartholow.
R Potassii iodidi.....	gr. iv.	
Aquæ.....	3j.—M.	
Sig.: Apply locally.		—Bartholow.

R Mel. boracis.....5j.—M.

Sig.: Apply to patches with a brush.

—Ringer.

R Potassi chloratis..gr. x.

Aquæ3j.—M.

Sig.: Apply locally several times daily.

—Brunton.

R Sodii salicylatis.....5iss.

Aquæ destillatæ3j.—M.

Sig.: Apply five or six times daily.

—Hirtz.

APHASIA.

Is inability to use spoken language or to give vocal utterance to ideas. Where the memory of words is lost, it is called amnesic aphasia. Where the power of expression is lost and the words remembered, it is called ataxic aphasia. Aphasia is really not a disease, but a symptom.

Causes.—Aphasia is associated with a number of intracranial lesions; with occlusion either by thrombosis or embolism of the vessels; with cerebral hemorrhage; with encephalitis, abscess, meningitis, tumors; and it may be a merely mental and moral condition (Bartholow).

Treatment.—The local disease on which the aphasia depends must be removed. If the aphasia persists after the local disease has been cured, much may be done by suitable training.

APOPLEXY.

Is sometimes used synonymously with cerebral hemorrhage, but incorrectly, since it is a symptom merely, and not a disease (Bartholow). DaCosta says that apoplexy is coma coming on rapidly, in consequence of the compression of the brain by extravasated blood, by the turgescence of the vessels, or by effusion of serum.

Loomis limits the term cerebral apoplexy to non-traumatic hemorrhage into the cerebral substance or meninges.

Causes.—Apoplexy is rare before 40 years of age. Miliary aneurism, periarteritis, fatty, atheromatous and fibroid degeneration of the walls of the vessels are causes of apoplexy, or cerebral

hemorrhage. Other predisposing causes are: gout, rheumatism, syphilis, chronic Bright's, and chronic alcoholism.

The exciting causes are: mental excitement, as in public speaking, sexual intercourse, straining at stool, and violent muscular exercises, and sudden stopping of bleeding piles (Flint and Loomis).

Symptoms.—The seizure is generally sudden, and the coma quickly developed. The patient falls to the ground, bereft of all consciousness. In other instances, the apoplectic seizure is preceded by vertigo, dizziness, double vision, *muscæ volitantes*, flushing or pallor of the face, nausea, etc. During the coma the patient lies as if in a deep sleep, breathing laboriously and noisily, and each snoring inspiration is followed by a puffing sound. The pulse is slow, full, and at times irregular; the carotids throb violently. The pupils are immovable, and either contracted or dilated, and the eye is half open. In severe cases, the breathing becomes very irregular, of the Cheyne-Stokes variety.

The coma may last from a few hours to two, three, or four days. Hemiplegia upon the side opposite to the hemorrhage is one of the most constant attendants of apoplexy, especially in the aged (Loomis). The eyes, and the head also, frequently deviate toward the side affected in the brain and from the side paralyzed; this movement constitutes a means of diagnosis between cerebral hemorrhage and other causes of profound unconsciousness (Bartholow).

Treatment.—The patient should be placed in a cool, airy apartment. Cold should be applied to the head, and heat to the feet. Attention must be directed to the bladder. An active cathartic should be given. If there are any paralyzed muscles, kneading, rubbing and electricity are the proper remedies.

PRESCRIPTIONS FOR APOPLEXY.

R Olei tigllii.....ʒj.

Sig.: Three or four drops may be given at once and repeated in three or four hours if free purgation be not produced. —Flint.

APPENDICITIS.

Is an inflammation of the appendix vermiformis.

Causes.—The usual causes are foreign bodies, such as inspissated feces, fruit seeds, worms, gall stones, catarrhal condition and traumatism. It is most frequent in males from fifteen to thirty years of age.

Symptoms.—At first there are slight localized pain and tenderness in the right iliac region. Later on, there is pain in the groin, extending down the course of the anterior crural and through the hip. The slightest attempt at palpation gives the patient great dread. The thigh is flexed on the pelvis.

The following symptoms are diagnostic of perforation or acute peritonitis: a sharp, sudden, intense pain in the iliac fossa which may extend to the navel, liver, or into the back, accompanied by nausea, vomiting and chill. Temperature 101° to 102° .

A circumscribed tumor is usually detected and sometimes fluctuation.

Prognosis. When perforation has occurred, unfavorable.

Treatment. Antiphlogistic measures locally, and opium internally, but according to Loomis, it is best to make an exploratory incision.

ASCITES.

Is a local dropsy—an accumulation of serum in the peritoneal cavity. The amount of fluid present in ascites may vary from a few ounces to five gallons (Loomis). It is usually of a light straw color. Ascites is a symptom, or an effect of disease—not strictly a disease in itself.

Causes.—Ascites may be the result of disease of the peritoneum, or of obstruction in the main trunk of the portal vein, or in the branches of the vessel within the liver. Cirrhosis, thrombosis, syphilitic hepatitis, abscess, cancer, and other tumors of the liver may cause ascites. Diseases of the heart or lungs may induce ascites in connection with general dropsy. Bright's disease is a cause of hydræmic dropsy.

Symptoms. The first is gradual enlargement of the abdomen. There is no pain, tenderness, or any local subjective

symptoms. The appetite is usually impaired. There is a feeling of fullness. There is dyspnœa. The umbilicus is bulged out. Flatulence and diarrhœa are frequently present. The superficial veins on the abdomen or chest are enlarged and tortuous. The shape of the abdomen changes with a change of the position of the patient. Fluctuation is present. On percussion, there will be flatness below the level of the fluid. Ascites may be mistaken for an ovarian cyst, a distended bladder, pregnancy, and hydatid cysts of the liver.

Prognosis.—In most cases unfavorable.

Treatment.—First, treat the cause if known. Try to remove the fluid by means of diuretics and hydragogue cathartics; but do not continue the treatment too long. The most efficient hydragogue is elaterium, and the potash salts, nitre, squills and juniper are the most efficient diuretics. As little fluid as possible should be taken. Tapping is the surgical method of removing the fluid. The puncture is made in the median line two or three inches below the umbilicus. Loomis is in favor of tapping before the fluid has caused pressure upon the viscera. The operation of tapping involves little risk. Patients have tapped themselves.

For the general health give quinine, iron and cod-liver oil.

PRESCRIPTIONS FOR ASCITES.

R Elaterii.....gr. j.

Ft. in no vi. pulveres.

Sig.: One powder about 5 A. M. every other morning.

—Salter.

R Elaterii.....gr. ij.

Ft. in no viii pulveres.

Sig.: One powder at short intervals until abundant liquid evacuations are produced.

—Flint.

R Pulveris jalapæ compositi.3j.

Ft. in no viii pulveres.

Sig.: One powder in early morning.

—Bartholow.

ASTHMA.

Is a disease characterized by spasmodic difficulty of breathing, attended with wheezing and a sense of suffocation. It is a neuropathic affection, tonic spasms of the bronchial circular

muscular fibres being induced by a morbid excitation through the nervous system (Flint).

Causes.—A peculiar susceptibility in some persons constitutes the predisposing cause. Heredity is traced in about forty per cent. The exciting causes are: irritating inhalations, such as ipecac powder, chemical vapors, smoke, dust, fog, emanations from new mown hay, stables, roses, sulphur matches, cats, horses, etc. (Loomis). Errors in diet, bronchial catarrh and feather beds are causes.

Course.—The paroxysms last from two to six hours, but sometimes they persist for days (Bartholow). They take place, usually, during the sleeping hours. The patient is unable to lie down, but sits with the elbows on the knees near an open window. A patient suffering from a severe paroxysm appears to be on the point of death. A frequent symptom is an itching sensation under the chin. Speech is difficult. The patient may be cyanotic (Loomis).

Prognosis.—Death rarely, if ever occurs from uncomplicated asthma. Asthmatics are long-lived.

Treatment.—To relieve the paroxysm, no medication is so effective as the hypodermic injection of morphine (from $\frac{1}{2}$ to $\frac{1}{4}$ gr). Chloral hydrate (gr. xx-xxx) is often equally effective (Bartholow). Nitrite of amyl by inhalation, three to five drops, sometimes affords relief. Inhalation of ether or chloroform may be tried. Stramonium leaves may be smoked in a pipe. It often acts like a charm.

PRESCRIPTIONS FOR ASTHMA.

R Potassii iodidi..... \bar{z} ss.
Tincturæ gentianæ comp..... \bar{z} ijj.—M.

Sig.: One teaspoonful gradually increased to two teaspoonsful, three times daily for several months. —Alonzo Clark.

R Sodii iodidi.....gr. ij.
Sodii bromidi.....gr. ij.
Fluidi ext. euphorbia pil..... \mathcal{N} iij.
Glonoingr. $\frac{1}{16}$.
Tincturæ lobeliæ..... \mathcal{N} ij.

(Hare's anti-asmatic tablet.)

Sig.: One three times daily for sometime.

R Pyridin.....3j.

Sig.: Put on a hot plate in a small room, and send patient to inhale vapor several times. —German See.

R Tincturæ sanguinariæ.....

Tincturæ lobeliæ.....

Ammonii iodidi—aa.....3j.

Syrupi tolutan3vj.—M.

Sig.: A teaspoonful every two to four hours. (In humid asthma.) —Bartholow.

R Ammonii bromidi.....3iij.

Ammonii chloridi.....3iss.

Tincturæ lobeliæ.....3iij.

Spiritus ætheris compositi.....3j.

Syrupi acaciæ—add.....3iv.—M.

Sig.: A dessertspoonful in water every hour or two during paroxysm. —Pepper.

ASTHENIA. (Nervous).

Literally signifies without strength.

When the nervous system is without strength it is called nervous asthenia, or nervous debility, or nervous prostration or exhaustion, or simply neurasthenia. It is a morbid condition common in this country.

Causes.—Sexual excesses, masturbation, excessive mental labor, late hours, long continued emotional disturbances of any kind, insomnia, improper food and the excessive use of tobacco or alcohol may excite it in persons of a neurotic temperament.

Symptoms.—Physicians are often consulted by patients, who, although far from being well, have no well defined malady. They complain of languor, of being easily fatigued, and of aching of the limbs. They suffer constantly from dorsal and lumbar pains, and there seems to be no organ or part of the body free from some kind of disturbance. They imagine that they have some grave organic disease. There is a tendency to melancholia. There is anorexia, and the tongue is coated. Flatulence, dyspepsia, constipation, headache, palpitation of the heart, and tingling and creeping sensations are usually present. Chilly sensations alternate with flashes of heat.

Prognosis.—Is always good.

Treatment.—All causes producing neurasthenia should be removed. Rest, change of scene, nutritious diet, out door life and sound sleep tend to produce a cure. Faradism, galvanism, sea bathing and massage are of great value. Cod-liver oil, iron, strychnine, arsenic, phosphites and phosphates are useful.

R	Quiniæ sulphatis.....	gr. xxx.
	Acidi sulphurici diluti.....	q. s.
	Aquæ.....	℥ij.
	Tincturæ ferri chloridi.....	℥ss.
	Spiritus chloroformi.....	℥vj.
	Glycerinæ—add	℥iv.—M.

Sig.: A teaspoonful three times daily.

—Loomis.

APHONIA. (Nervous).

Is loss of voice. When not dependent on either inflammation or lesions within the larynx it is known as nervous aphonia.

Causes.—Paralysis of the nerve of phonation (spinal accessory), and pressure on the recurrent laryngeal nerve by an aneurism, or other tumor will cause aphonia.

Diagnosis.—In nervous aphonia the patient speaks in a pure, soft whisper, without effort. If the aphonia be due to laryngitis, the whisper is stridulous or husky and labored, and there is usually cough.

Treatment.—Tonic remedies and invigorating hygienic measures are indicated. Moderate counter-irritation may be useful. The galvanic and faradic currents are used with much success. Sometimes a single application is followed by recovery of the voice (Flint).

ASCARIS LUMBRICOIDES.

Is the round worm found in the small intestine. It has a cylindrical form tapering toward both ends, like the common earth worm. The total number of eggs contained in a fully developed female has been estimated at sixty millions. They hatch after being frozen or dried. The round worm occasionally enters the stomach and is vomited. Sometimes it ascends the œsophagus into the throat, and enters the larynx and causes death.

It has been found in the common bile-duct, gall-bladder, pancreatic-duct and vermiform appendix. These worms, when numerous, collect in balls, and are then difficult to expel, sometimes causing obstruction. Length of worm, six to twelve inches.

Causes.—The eggs are found in the drinking water, in fruits and vegetables which are eaten raw, and thus develop in the intestine. Filthy surroundings and uncleanness favor their development.

Symptoms.—The usual symptoms are colicky pains about the umbilicus, itching and picking at the nose, foul breath, bloody mucous diarrhœa, perverted appetite, restlessness, and disturbed sleep in which the child grinds its teeth, sometimes nausea and vomiting, tumid abdomen, whey-like urine, bluish color of eyelid, and there may be convulsions. But the only symptom which gives positive evidence of the existence of intestinal worms is their discovery in the stools or about the anus (Loomis).

Treatment.—Santonine is the most effective remedy for round worms. Santonine affects the vision and makes all objects seem as if looked at through yellow-colored glasses (Bartholow). One-half grain for a child and three to six grains for an adult is a maximum dose (Loomis). The dose is given at night, followed by a laxative in the morning.

PRESCRIPTIONS FOR ROUND-WORMS.

R Olei chenopodii.....5j.
 Acaciæ.....5ij.
 Syrupi simplicis.....3j.
 Aquæ cinnamomi.....3ij.—M.

Sig.: Give a dessertspoonful three times a day for three days, and repeat after several days. —Smith.

R Spiritus terebinthinæ rec.....5ij.
 Olei limonis.....gtt. v.
 Mucil gum acaciæ.....
 Syrupi simplicis.....aa.....5vj.
 Aquæ anisi.....3ii-iiij.—M.

Sig.: One teaspoonful every six hours. —Smith.

R Extracti spigeliæ fluidi.....℥j
 Extracti sennæ fluidi.....℥ss.—M.

Sig.: One teaspoonful to a child from three to five years.

—J. Lewis

ASPHYXIA.

If the quantity of oxygen in the blood be greatly diminished, there follows a group of symptoms to which the names suffocation, asphyxia and cyanosis are applied.

Causes.—Obstruction or compression of the air passage in croup, pneumonia, phthisis, pneumo-thorax, asthma, œdema, etc.; also, obstruction to the circulation in the lungs, as embolism of the pulmonary artery and in valvular lesions of the heart; also irrespirable gases, etc.

Symptoms.—Dyspnoea, convulsions, lowering of the temperature, elevation of the blood pressure, at first slow pulse, rapid, dilatation of the pupils, and dark blue color of the surface of the body.

Treatment.—The treatment consists in removal of the cause, if possible, and in efforts to increase the quantity of oxygen in the blood. This increase is best affected by artificial respiration (Flint).

ATHEROMA, OR CHRONIC ENDARTERITIS.

Is an inflammation of the internal coat of the arteries thickening in patches. Calcareous granules infiltrate the wall and render the artery friable. Atheroma is a common disease of old age.

Causes.—It is a disease of advanced life. It is predisposed to by gout, rheumatism, syphilis, Bright's disease, lead poisoning and especially by alcoholismus (Loomis).

Symptoms.—Rigidity of the arteries, which are enlarged and tortuous, is a prominent symptom. The pulse is feeble. The left ventricle is hypertrophied. The extremities are cold. The skin becomes dry.

Prognosis.—It is a condition which cannot be cured (Loomis).

BACKACHE.

The backache so common in women and frequently due to anæmia of the cord, may be much relieved by a sponge dipped in hot water and passed over the spine. The hot douche to the spine is often more decidedly serviceable in these distressing cases (Bartholow).

BALANITIS.

Is an inflammation of the surface of the glans, penis and prepuce.

Causes.—A long and tight prepuce is always a predisposing cause. The exciting causes are mechanical irritation or uncleanness, or from prolonged contact with gonorrhœal, leucorrhœal, menstrual, or other irritating fluids.

Symptoms.—Redness and swelling with ulceration and discharge, sometimes followed by phimosis, or paraphimosis. If gonorrhœa be the cause, it is called external gonorrhœa.

Treatment.—Wash the parts with warm water, and dry them, and dust with calomel. If the ulcerations are deep, use iodoform. A piece of lint or old linen is moistened in dilute lead water, or a gr. ij.–iv. solution of sulphate of zinc, and is laid around the glans, and the prepuce is pulled over it. This dressing should be repeated two to four times daily. If the prepuce cannot be retracted it may be washed out with a syringe. If the prepuce is much inflamed, rest, position, and evaporating lotions should be used. In cases of relapse circumcision affords a cure (Keyes).

BALDNESS. (See Alopecia.)

BASEDOW'S DISEASE. (See Exophthalmic Goitre).

BED-SORES.

May be described as the death of a part from mechanical pressure. Bed-sores may arise in healthy subjects who are kept unmoved for ten to fourteen days. Dirt and moisture, under all circumstances, accelerate their appearance.

Treatment.—"Prevention is better than cure." Since bed-sores are caused by continued pressure, a change of the patient's position will relieve. The skin of the part pressed upon should be hardened by washing it twice a day with some camphor spirit and water, vinegar and water, or nitrous ether and water, in the proportion of one part to three. It is a useful practice to wash the parts threatened with bed-sores with whiskey or alcohol; it hardens the cuticle, and prevents ulceration (Bartholow). Alum ʒss., the whites of four eggs and tincture of camphor ʒij., is an excellent application to bed-sores (Bartholow).

Equal parts of tincture of catechu and liquor plumbi is a useful application to prevent bed-sores (Ringer). One of the best preventives of bed-sores is glycerine, or glycerine cream, rubbed over the part after washing it with tepid water (Ringer).

The above applications are useless when the parts are about to slough. Water and air cushions should be employed to relieve the pressure. Dust iodoform over the sores. A linseed and bread poultice, with charcoal sprinkled upon the surface, is a good application (Bryant).

BILIOUSNESS.

Is a functional derangement of the liver.

Causes.—It may be due to gastric and intestinal dyspepsia, to atony of the bowels, to malaria, to faulty diet, the food being too rich, to alcohol, to sedentary habits, and ill-ventilation, etc. (Loomis).

Symptmos.—Anorexia, a bitter taste in the mouth, flatulency, acidity and pyrosis, a yellowish-coated tongue, yellow conjunctiva, muddy skin, nausea, constipation, headache, pain in the limbs, etc.

Treatment.—The bowels should always be kept freely open. The alkalies are useful. The bromide of potassium, combined with ammonium chloride is highly useful. Mercury, in the form of blue pill, is very efficacious (Loomis).

PRESCRIPTIONS FOR BILIOUSNESS.

R Acidi nitromuriatici diluti.....5j.

Sig.: Ten or fifteen drops, well diluted, before meals.

—Bartholow.

R Ammonii chloridi.....gr. xxij.

Sig.: To be taken thrice daily in a glass of milk. —Murchison.

R Sodii sulphatis.....

Potassi et sodii tartratis.....aa...3j.

Infusi cascarillæ.....3viij.—M.

Sig.: Two tablespoonfuls three times daily.

—Fothergill.

R Aloni

Extracti nucis vomicæ.....aa.....gr. vj.

Extracti belladonnæ.....gr. iij.—M.

Ft. massa et in pil. no. xxiv. div.

Sig.: One or two pills at night, followed by a saline cathartic before breakfast.

—Witherstine.

BITES.

The weaker solutions of ammonia are sometimes applied to the bites or stings of insects, as wasps, bees, spiders, etc., to neutralize the formic acid, the active principle of the poison (Ringer). Alcoholic stimulants are given to counteract the depressing effects of the bites of venomous snakes. The strong aqua ammoniæ should be at once applied to the bite of venomous serpents, and of rabid animals (Bartholow).

Potassium permanganate has been used with success as a remedy for the bites of venomous snakes and other animal poisons, applied locally and given internally (LaCerdo).

PRESCRIPTIONS FOR BITES (SNAKE).

R Aquæ ammoniæ℥xxx.

Aquæ.....5iss.—M.

Sig.: To be injected into the vein with hypodermic syringe.

—Halford.

R Tincturæ iodinii.....5j.

Sig.: Apply freely to the wound.

—Weir Mitchell.

BLADDER DISEASES (See Cystitis).**BLEPHARITIS**

Is an inflammation of the eyelid. There are various degrees and kinds of this affection. There may be a chronic hyperæmia of the border, or some redness, with an accumulation of yellowish fatty material at the base of the lashes, or ulceration, minute abscesses, etc., and the hair follicles atrophy and the lashes fall out. This disease occurs most often in the young, with delicate skin and light hair, and in the strumous. It is sometimes a kind of eczema. In very many cases it is associated with some refractive or muscular error, and the proper glasses will correct it. The ailment is apt to be chronic (Noyes).

Treatment.—Soothing lotions, warm water, or warm milk and water are useful; and at night a mixture of boracic acid powder and vaseline (gr. xxx to ʒj.) may be applied to lids. For the ulcerative forms, two grains of hydrarg. oxid. flavæ to one drachm of vaseline, should be applied night and morning. If the patient is scrofulous, constitutional treatment must be instituted (Noyes).

BLOODY FLUX. (See Dysentery).**BOILS.** (Called also Furuncle).

A boil is a hard, bounded, deep-red, raised and very painful swelling, situated in the subcutaneous tissue, occurring on all parts of the body, and usually terminating in suppuration. Boils, or furuncles, are met with in two forms, one as a subcutaneous affection, attended with little pain until the skin over it inflames and suppurates. It then appears as a conical-pointed swelling, with inflamed indurated areola; this causes severe distress, tension and throbbing, and is followed by relief when the "core" is discharged.

The second form of boil begins as an inflamed follicle or pimple. It suppurates slowly. Such boils are usually multiple, and are often caused by the application of moist dressings or of some cadaveric irritant (Bryant).

Causes.—No definite cause can be assigned in some cases. Boils occur in men and women who are in perfect health; but they are more common in debilitated persons, and in those who work in skin-yards, pathological rooms and dissecting rooms. They occur in the diabetic and cachectic subject, and are often the result of eating diseased meat (Bryant).

Treatment.—Is both local and constitutional. The diet should be nutritious; fresh air, exercise, mild laxatives, warm baths, quinine, iron, arsenic and bitters are useful. The usual local treatment is a poultice to the part and free incision. For indolent boils, a drachm each of glycerine and extract of opium, and an ounce of resin cerate applied relieves the pain. Painting the boil with iodine is recommended. When the pain is great from tension, lancing relieves it.

PRESCRIPTIONS FOR BOILS.

R Liquoris potassii arsenitis.....5vj.

Sig.: Three drops in water, three times daily after meals.

R Calcii sulphidi.....gr. ij.

Sacchari lactisgr. xx.—M.

Ft. in no. xx. pulveres.

Sig.: One powder every hour or two.

—Ringer.

Faradization will hasten suppuration (Rockwell).

BLOOD POISONING. (See Septicæmia).

BREATH (Foul).

To correct fetor of the breath, the following formulæ may be used:

R Calcis chloratæ5iij.

Aquæ destillatæ.....3ij.

Alcoholis3ij.

Olei rosæ.....gtt. iv.—M.

Sig.: A teaspoonful to a tumblerful of water. —Bartholow.

R Potassii permanganatisgr. viij.

Aquæ rosæ..... $\frac{3}{4}$ viij.—M.

Sig.: Use as a mouth wash. This is an elegant toilet preparation for destroying the odor of a foul breath, the smell of the axilla, and the fetor of the sweat of the feet. —Bartholow.

BREAST. (Inflammation of).

The subcutaneous inflammation may be confined to the areola, and this form generally terminates in suppuration; in other cases the inflammation may extend beyond the areola and give rise to localized abscesses.

The treatment in both of these forms consists in the application of warm lead-lotions and in the early evacuation of pus. To avoid cutting into the milk ducts the incision should radiate from the nipple (Lusk). Inflammation of the glandular structure of the breast develops usually in the first four days after confinement. The attack usually begins with a sharp pain, high fever, and nodular enlargement of the breast. Mastitis that occurs three to four days after the birth of a child is, as a rule, insignificant, but the mastitis leading to abscess formation belongs to a later period, third or fourth day.

Causes. Are cold, blows, and "caking," but the least injury to the nipples are thought to be the main cause.

Treatment. Take the child from the breast, and in a large number of cases the inflammation will disappear. For the pain, opium; for the fever, a full dose of quinine should be administered. Give a saline cathartic. Belladonna in the form of an ointment may be applied to the breast, or lead-and-opium wash, or a large flax-seed poultice. As soon as there is evidence of pus, the abscess should be opened with antiseptic precautions (Lusk).

BRONCHOCELE. (See Goitre).

BUBONOCELE. (See Hernia).

When the protrusion takes place above Poupart's ligament through the internal ring, but does not traverse the inguinal canal sufficiently far to appear through the external ring, the hernia is called a bubonocoele (Rever).

ally sufficient to distinguish it from pneumonia and pleurisy. Besides bronchitis commences by chilliness persisting for several days—pneumonia by a distant and severe rigor. In bronchitis, the fever declines gradually, in pneumonia, there is a sudden defervescence.

Treatment.—The combination of tartar emetic (gr. $\frac{1}{6}$) and morphine (gr. $\frac{1}{2}$) in some syrup of lactucarium, or in water, a mustard-plaster to the chest, and confinement to bed, will afford relief (Bartholow). In children, syrup of ipecac, syrup of tolu, and paregoric, usually suffice. If there is much fever and the pulse active, tincture of aconite root (gtt. j.) should be added (Bartholow). At the onset of the disease, it may be arrested by a Dover's powder (gr. x.) and warm bath at night, followed in the morning by a brisk saline purge; or gr. xx. of quinine (Loomis).

PRESCRIPTIONS FOR BRONCHITIS.

℞ Tincturæ sanguinariæ.....3j.
Tincturæ lobeliæ.....3j.
Vini ipecac.....3ij.
Syrupi tolutan.3ss.—M.

Sig.: A teaspoonful every three hours. —Bartholow.

℞ Ammonii carbonatis.....gr. x℥.
Spiriti chloroformi..... 3ss.
Infusi senegæ..... 3viiij.—M.

Sig.: Two tablespoonfuls every four or six hours. —Fothergill.

℞ Acidi hydrocyanici diluti.....℥i xvi.
Syrupi pruni Virginianæ.....
Aquæ camphoræ.....aa.....3j.—M.

Sig.: A teaspoonful every two or three hours. —Hartshorne.

℞ Vini ipecac3j.
Tincturæ scillæ.....3ij.
Syrupi tolutan.....3iv.
Aquæ3i.—M.

Sig.: A teaspoonful every three or four hours. —Delafield.

℞ Terpene hydrate.....3ss.

Sig.: Two to four drops on sugar every four hours according to child's age. —Cammann.

℞ Vini ipecac5ij.
 Liquor potassii citratis.....5iv.
 Tincturæ opii camphoratæ.....
 Syrupi acaciæaa.....3j.—M
 Sig.: A tablespoonful three times daily. —DaCosta.

℞ Vini ipecac.....5ij.
 Vini antimonialis.....3j.
 Vini xerici5iij.—M.
 Sig.: Three drops every hour to a child six months old.
 —Dessau.

BRONCHITIS. (Acute Capillary).

Acute bronchitis, by an extension of the inflammation to the finest tubes, becomes capillary bronchitis. Capillary bronchitis is more frequent in infancy and old age than at other periods of life (Bartholow).

Symptoms.—So difficult is the breathing that the patient is unable to lie down, he sits inclined forward, and the respirations are shallow, reaching in the adult to forty, in infants to eighty per minute. The difficulty of breathing is incessant. The inferior part of the chest and the epigastrium are drawn in with each inspiration instead of being elevated, while the upper portion of the chest remains immovable (Bartholow). The speech is short and jerky; the alæ nasi dilate, the face is congested and swollen, has a livid aspect, the lips become blue, and there is blueness of the finger ends, with fullness of the jugular veins (Loomis). Cough is more or less prominent. The expectoration is, at first, thick, viscid and tough, and when some is put in water the froth floats and is connected by filaments with the heavier masses underneath the surface. There is great restlessness and anxiety. As death approaches, the pulse becomes small and thready, muttering delirium comes on, or the patient lies in a state of partial coma (Loomis).

Physical Signs.—The presence of muco-purulent liquid in the small tubes gives rise to fine bubbling (subcrepitant) rales. As the affection is bilateral, the rales are heard on both sides.

Differential Diagnosis.—Capillary bronchitis may be confounded with pneumonia, asthma, pulmonary cedema, phthisis

and ordinary bronchitis; Lobar pneumonia is to be excluded by the absence of the symptoms and signs of that disease, such as dullness on percussion, the crepitant rale, pain in the side, the rusty colored sputum, etc. Asthma is not accompanied by pyrexia. In asthma the respirations are not rapid but labored.

Prognosis—Unfavorable.

Treatment.—Breathing warm vapor is highly useful, and the air of the room should be charged with steam during the course of the disease. The temperature of the room should be kept at a high point, 85° to 90°. The iodide of potassium should be given freely (Flint). Muriate of ammonia, or chlorate of potash in five or ten grain doses every two hours to an adult is useful (Loomis). Laxatives are useful and revulsive applications to the chest. Emetics are sometimes indicated to promote the expectoration. In the advanced stage, quinine and stimulants must be given.

PRESCRIPTIONS FOR CAPILLARY BRONCHITIS.

℞ Liquoris ammonii acetatis3ss.
 Syrupi ipecac.....3j.
 Liquoris morphinae sulphatis....℞xL.
 Syrupi acaciae.....3j.
 Aquæ.....3iss.—M.

Sig.: A teaspoonful every two hours for a child two years old.
 —Meigs and Pepper.

℞ Tincturae aconiti radice3ss.

Sig.: One or two drops every hour. —Dessau.

BRONCHITIS. (Chronic).

Is a chronic inflammation of the mucous membranes of the bronchial tubes. When the secretion is retained and undergoes decomposition, as is apt to be the case when the tubes are dilated, it is known as fetid bronchitis.

The diagnosis is easily made.

Treatment.—Iron, quinine, arsenic, lacto-phosphate of lime hypophosphites, cod-liver oil, whiskey and strychnine, and a generous diet are indicated.

For fetid bronchitis, the spray of a solution of carbolic acid is good.

BRIGHT'S DISEASE.

Acute Bright's disease, or acute diffuse nephritis, is a disease of the kidneys characterized by albuminuria and general dropsy. It is an inflammation of the kidneys. Anasarca and serous accumulations in the plural, pericardial and peritoneal cavities are usually met with in the bodies of those dead of acute Bright's disease (Flint).

Causation.—Acute Bright's disease may occur at any period of life. In the majority of cases it is a sequel of scarlatina. It may follow diphtheria and epidemic cholera. It may occur in the course of pulmonary tuberculosis, rheumatism, syphilis, typhoid and typhus fever, yellow fever, erysipelas, acute lobar pneumonia, pyæmia, septicæmia, endocarditis, dysentery, carbuncles, small-pox and measles. As a primary affection it occurs especially in persons addicted to intemperance. It may be caused by exposure to cold, and by extensive burns. Other causes are, cantharides, turpentine, phosphorus, carbolic acid, iodoform, the mineral acids, arsenic, lead and mercury taken internally (Bartholow, Flint, and Loomis).

Symptoms.—Dropsy is an early symptom in the great majority of cases, but it is sometimes wanting. The œdema is generally first observed on the face, particularly on the eyelids and around the eyes. There may be fever, thirst, anorexia, pain and tenderness in the loins. Pain over the kidneys may be wanting. The quantity of urine is usually diminished, and it may be very scanty. The urine contains albumen frequently in great abundance. In some cases the urine has a reddish-brown, smoky appearance from the presence of blood. Blood casts, epithelial casts, and hyaline casts are usually present in the urine. Urea may collect in the blood and cause uræmia. Impaired vision and amaurosis are among the effects of uræmia. Blindness in acute albuminuria is generally sudden; but is often temporary. The ophthalmoscope shows no morbid appearances within the eye. The morbid condition is central. The average duration of the disease is about four weeks (Flint).

Prognosis.—Exclusive of uræmia and serious complications the prognosis is favorable (Flint).

Treatment.—The patient should be kept warm in bed. The diet should be unstimulating. Dry cupping over the loins, saline laxatives, and fomentations over the region of the kidneys are useful. For the dropsy elaterium is the most prompt and reliable hydragogue. The diuretics to be used are bitartrate of potassa, the infusion of digitalis, and the decoction of broom.

Of all diuretics, water is the best.

Good sudorific remedies are pilocarpine and the liquor ammoniæ acetatis (Flint).

PRESCRIPTIONS FOR BRIGHT'S DISEASE.

R Acidi gallici.....3i-ij
 Acidi sulphurici dil3ss.
 Tincturæ lupuli.....3j
 Infusi lupuli.....ad.....3vi.—M.

Sig.: A tablespoonful thrice daily. (If urine is smoky).

—Aitken.

R Ferri sulphatisgr. xv.
 Magnesii sulphatis.....3ij.
 Potassii bicarbonatis3iij.
 Infusi buchu.....3vii.—M.

Sig.: A tablespoonful once or twice a day in a tumblerful of water.

—Fothergill.

R Infusi digitalis3vii.

Sig.: A tablespoonful morning and evening.

(For the dropsy of Bright's Disease.

—Bartholow.

Albuminuria, dropsy, and uræmia are common to both acute and chronic Bright's Disease (Flint).

BUBO.

Is a circumscribed swelling and inflammation of the groin, or of a lymphatic gland, syphilitic or otherwise.

Varieties.—1. Simple inflammatory bubo. 2. Virulent bubo. 3. Syphilitic bubo.

Causes.—Simple inflammatory bubo is very common with chancre, and may occur with any inflammatory lesion, as gonorrhœa, syphilitic chancre, herpes, and balanitis. This form is also known as sympathetic bubo. It is the same inflammatory

glandular swelling as occurs after vaccination, or from an inflamed corn. Any inflammatory lesion of the penis may be accompanied by a simple bubo, (single or double) in the groin. Chancroid is the most common exciting cause (Keyes).

Virulent bubo, the pus of which is auto-inoculable, can be found in connection with no other conceivable lesion than chancroid. It is usually single, in one gland, on one side. It suppurates necessarily. Simple bubo usually does, but may not suppurate. Pure syphilitic bubo does not suppurate.

Bubo is more common in the male than in the female. Sometimes in double bubo, simple bubo will exist on one side and virulent on the other (Keyes).

Diagnosis.—*Syphilitic Bubo:* 1. Nature: It is a specific affection. 2. Its frequency: It is a constant symptom attending syphilitic chancre. 3. Number of glands involved: Usually more than one. 4. Date of appearance: It develops during the first or second week of syphilitic chancre. 5. Size: The glands are usually only slightly enlarged. 6. Induration: The glands are specifically indurated, feeling like cartilage, or wood. 7. Evidence of inflammation: None; the glands are freely movable among the tissues. The skin is neither adherent nor red, nor is there any pain. 8. Termination always in resolution. 9. Auto-inoculability: In cases of suppuration the pus is not auto-inoculable. 10. Natural duration is a few weeks or months. 11. Prognosis is good as far as local results are concerned, but the patient invariably has syphilis. 12. Local treatment is ineffective (Keyes).

Bubo of Chancroid: 1. Nature: It may be simple or virulent. 2. Its frequency: It is a complication, occurring about once in three cases. 3. Number of glands involved: Usually consists of a single gland in any part of the body. 4. Date of appearance: There is no fixed date. 5. Size: The gland is greatly enlarged. 6. Induration: No hardness except inflammatory. 7. Evidence of inflammation: There is every appearance of inflammation. The gland becomes fixed, the skin adherent, the part feels hot, there is pain, the skin reddens. 8. Termination: Occasionally by resolution, usually by suppuration. *Virulent bubo* invariably suppurates and becomes an open chancroid

ulcer. 9. Auto-inoculability: When the bubo is inflammatory the pus is not auto-inoculable; where it is virulent the pus is invariably auto-inoculable. 10. Natural duration is a few weeks or many months as a chancre. 11. Prognosis is good for simple, less so for virulent, and, in neither case, does syphilis follow. 12. Local treatment useful and necessary (Keyes).

Treatment.—The preventive treatment of simple bubo is rest, and absolute destruction of the chancre with caustics. Tincture of aconite and belladonna, combined in equal parts, are of some use locally, especially if combined with rest. Tincture of iodine is useless, if not harmful, in acute advancing bubo. The above treatment, combined with a light poultice, will often avert impending bubo (simple). Blisters may avert suppuration. Pressure is sometimes effective, if applied early. If the tendency to suppuration advances very slowly, the bubo is certainly simple; if rapidly, virulent. When opened spontaneously or by art, the outlet does not enlarge in simple bubo; in virulent bubo it does. If suppuration can be arrested in an inflamed gland, it must have been simple bubo, (unless syphilitic); virulent bubo must necessarily suppurate. It is a good rule to open the bubo early in any case, if pus be present. The treatment of syphilitic bubo is that of early syphilis (Keyes).

PRESCRIPTIONS FOR BUBO.

℞ Cerati resinæ comp..... 3j.

Olei Olivæ 5i-ij.—M.

Sig.: Spread on lint and apply. (To hasten suppuration and granulation). —Witherstone.

℞ Sol. hydrogen peroxidi...10 vol...3viiij.

Sig.: Apply after suppuration has begun. —Ringer.

℞ Tincturæ iodi..... 3j

Sig.: Apply with brush every other day, till skin becomes tender. —Van Buren.

BUNION.

Is an enlargement and inflammation of the bursa situated upon the side of the great toe at the metatarso-phalangeal junction. Inflammation of this bursa is frequently so severe that

the reflex contractions which follow produce a sub-luxation at this joint. The bursa may suppurate. The pain is sometimes intense and torturing (Sayre).

Causes.—Ill-fitting boots and shoes, and weight from over-standing.

Treatment.—Under all circumstances, the pressure must be removed. A wide and easy boot should be worn. To the inflamed bunion water dressing is the best application. By means of Sayre's apparatus keep the great toe in a straight line with the foot.

PRESCRIPTIONS FOR BUNIONS.

R Acidi tannici

Cosmolini.....aa.....3ij.—M.

Sig.: Apply to joint after skin has been removed by blister.

—Gross.

R Tincturæ iodi.....

Tincturæ belladonnaaa.....3ij.—M.

Sig.: Apply twice daily with a brush.

—A. U. Med. Sci.

BURNS AND SCALDS.

A burn is caused by the application of concentrated dry heat to the body; a scald by the application of hot or boiling liquid. In a burn of the first degree, there is mere redness followed by desquamation. In the second degree, there is inflammation and a blister. In the third degree, the superficial layer of the true skin is destroyed, and when shed, the nerves are exposed and pain severe. In the fourth degree, the whole thickness of skin is destroyed, and when the dry eschar comes away, a tedious process of suppuration and granulation takes place. In the fifth degree, the skin with the deeper parts is a black mass. In the sixth degree, the whole thickness of the limb is carbonized (Bryant).

Prognosis.—A superficial burn spread over a large surface is more fatal than a deep burn on a small surface. When more than half of the body is injured by a burn or scald, a fatal result generally follows. In both old and young all burns of any

extent are serious. Burns of the chest, abdomen, head and face are followed by much more severe symptoms than more extensive burns of the extremities (Bryant).

Symptoms.—The earliest symptoms are those of shock. The skin is cold, accompanied by shivering. The pulse is rapid and feeble. The pain is severe and of greater intensity in slight than in deep burns. In the worst cases, pain is nearly or quite absent. In children vomiting is an early symptom. The patient may lapse into a drowsy condition followed by coma and death. If life be prolonged, reaction sets in after twenty-four to forty-eight hours, and traumatic fever. In severe burns we may have ulceration of the duodenum (Bryant).

Casting Off of Sloughs.—The slough separates in about fourteen days, and then suppuration commences. In the suppuration stage, there is great danger of exhaustion, hectic or pyæmia. The granulating surface is a long time in healing, and is followed by contraction if the whole skin has been destroyed.

Cause of Death.—When a person dies from a burn within forty-eight hours, it arises from shock, or collapse; when he dies in the stage of reaction or of inflammation, it is from visceral complication; and when during the third or suppurative stage, from exhaustion, visceral changes or pyæmia (Bryant).

Treatment.—Is both constitutional and local. Prevent collapse by use of stimulants and external warmth; allay pain by local treatment and morphine; maintain the strength by such food as milk, beef-tea, eggs, etc.

Local Treatment.—Blisters should be opened carefully. Exclude the air as much as possible. At Guy's hospital the application of carron oil, consisting of equal parts of lime water and linseed oil, applied on lint, has long been the favorite remedy. At University College the burn is covered with wheat flour. Zinc ointment on lint is used at London Hospital. Dr. Gross used white lead paint. Bryant uses vaseline and finely powdered boracic acid spread on lint. In small burns, two parts of collodion to one of castor oil is used, or one ounce of carbolic acid to a pint of olive oil, or an ointment of carbolic acid $\mathfrak{z}\text{iv}$., lard $\mathfrak{z}\text{iv}$., and castor oil $\mathfrak{z}\text{j}$. Extension must be kept up to prevent contraction. Skin-grafting may be necessary.

PRESCRIPTIONS FOR BURNS AND SCALDS.

- R** Acidi carbolicī.....gr. viij.
 Vaseline3ij.—M.
 Sig.: Spread on lint and apply where the skin is broken.
 —Bellevue Hospital.
- R** Sodii bicarbonatis.....3ij
 Aquæ.....Oj.—M.
 Sig.: Apply freely on lint or soft cotton.
- R** Olei lini.....
 Liquoris calcisaa.....3iv.
 Acidi carbolicī.....gtt. xxx —M.
 Sig.: Apply freely. —Charity Hospital.
- R** Cocaini.....gr. x-xx.
 Boroglyceridi3ij.—M.
 Sig.: Apply locally on absorbent cotton. —Eller.
- R** Saloli3ss.
 Liquoris calcis.....
 Olei olivæaa.....3.ij.—M.
 Sig.: Use locally. —Nicot.

CALCULI. (Biliary, Renal, and Vesical.)

When bile is retained in the gall-bladder for a long time it decomposes, and the cholate of soda and other bile salts, with cholesteroline, globules of bile-resin and granules are precipitated, and combine to form concretions, which are called biliary calculi, or gall-stones. Catarrh of the gall-bladder always accompanies this retention and decomposition of bile (Loomis).

Number of Gall-Stones.—Varies. Single calculi are rare. Eight thousand were found in one case. Their usual number is about thirty. Their size varies from that of a pin's head to that of a goose egg. In shape they are originally spherical, ovoid, or pear-shaped, but when they lie in contact with one another they may have facets.

Color.—They may be light brown, or greenish yellow, or white, green, blue, red or black. Gall-stones will not float in water. In most cases a fresh biliary calculus can be crushed between the fingers. A gall-stone may form in the smallest

radical of the hepatic duct. The gall-bladder may be normal or enlarged, and is often adherent to adjacent organs. Ulceration of the walls may take place and form openings, called biliary fistula. When calculi are found in the smaller ducts, they may excite abscess of the liver. Gall-stones may cause intestinal obstruction (Loomis).

Causes. Gall-stones may be formed at any period of life, but are most frequent after thirty-five. They are more common in women than in men on account of their less active mode of life. Those who have to pass the greater part of their lives in bed, and prisoners, are especially liable to gall-stones. The predisposing causes are, a diet rich in fats, animal food, alcoholic beverages, cancer of the liver, catarrh of the gall-bladder, etc. (Loomis).

Symptoms.—The severely painful sensation produced by the passage of a gall-stone is called biliary colic. Usually after a hearty meal, or after some jolting exercise, as horseback riding, the patient is suddenly seized with a severe pain in the epigastrium, which is increased by change of position or pressure. Sometimes nausea precedes the colic. The pain is paroxysmal, situated over the gall-bladder, radiates backward and upward, and may extend over both hypochondriac regions. It is a boring, tearing, piercing, or lancinating pain. It is often so agonizing that patients will roll about the floor or bed. The face is pale and covered with cold sweat. The abdominal muscles are rigid and pressure greatly augments the pain. Fatal syncope has occurred during an attack of gall-stone colic. After a few hours, sometimes a day, of exhausting and intense pain, the patient experiences sudden relief, and the pain entirely disappears. Jaundice is often present, but not until the attack has continued for twenty-four hours. After the attack, gall-stones may be found in the fæces (Loomis).

Differential Diagnosis.—Gall-stone colic may be mistaken for cardialgia, intestinal, and renal colic. In cardialgia, pain comes on immediately after eating; gall-stone colic has no necessary connection with taking food. In cardialgia, the symptoms are referred to the epigastrium alone, while in biliary colic, the pain shoots to the right shoulder and back. In cardialgia, the

pain gradually diminishes; in biliary colic it suddenly ceases. In gall-stone colic, the presence of a gall-stone in the fæces is pathognomonic. In intestinal colic, the pain begins at the umbilicus, and radiates over the abdomen. In gall-stone colic, the pain has its seat at the free border of the ribs, and shoots to the back and upward to the right shoulder. In intestinal colic, pressure relieves the pain; in gall-stone colic it aggravates it. In intestinal colic the pain is intermittent; in gall-stone colic it is constant, though paroxysmal. In intestinal colic, jaundice is never present, while it may exist in biliary colic. In renal colic, the pain shoots from the region of the affected kidney to the inner part of the thigh and end of the penis, and the testicles are retracted; in gall-stone colic the direction of the pain is upward and backward. In renal colic, there is a constant desire to micturate. There is no urinary disturbance in biliary colic (Loomis).

Prognosis.—Oft repeated attacks of biliary colic are bad.

Treatment.—Relieve the pain by morphine hypodermically, inhalations of chloroform or ether; two or three leeches over the gall-bladder is often followed by relief. Large draughts of warm water, containing bicarbonate of soda often relieves the pain. Wrap warm clothes around the abdomen. If there are signs of collapse, give stimulants (Loomis). A gall-stone patient must not have wine or fats. He must exercise in the open air. A prolonged course of alkaline mineral water has been found the best remedy against the formation of gall-stones. Ether, turpentine, chloroform and hydrate of chloral have been proposed as specifics, it being thought they have the power of dissolving the gall-stones. According to Bartholow, the most effective remedy for the removal of the conditions which lead to the formation of biliary calculi, or to bring about their solution, is sodium phosphate. He prescribes this in drachm doses, three times daily, dissolved in sufficient hot water, and taken before meals. This remedy is continued for several weeks or months. Vichy water should be used.

PRESCRIPTIONS FOR BILIARY CALCULI.

R Sodii bicarbonatis..... 3v.

In chartas no. xx div.

Sig.: One powder three times daily for several months (Prophylactic). —Alonzo Clark.

R Chloroformi..... ʒiv.

Sig.: To be inhaled, a small quantity at a time until paroxysm ceases. —Ringer.

R Sodii phosphatis..... ʒss-iss.

In chartas no. xx div.

Sig.: A powder before each meal continued for months (Prophylactic). —Bartholow.

R Olei olivæ optim..... Oj.

Sig.: To be taken in divided doses before breakfast.

R Morphinae sulphatis..... gr. ʒ-ʒ.

Atropinae sulphatis..... gr. ʒ-ʒ.

Aquæ q. s —M.

Sig.: To be injected hypodermically during the paroxysm, and repeat if necessary. —Bartholow.

CALCULI. (Renal).

Renal calculi are concretions formed by precipitation of certain substances from the urine about some body or material acting as a nucleus (Bartholow). They may be deposited in the tubes of the pyramids, in the cortical substance, or in the pelvis of the kidney. By far the most frequent variety is uric acid. Oxalate of lime may form the starting point of uric acid deposits. Phosphatic, next touric, are the most frequently encountered calculi. Mixed calculi are common. They vary in number. A kidney may contain one or a large number of concretions. They vary in size from a pin's head to a hazel nut; the larger ones may fill the whole pelvis; the smallest constitute "kidney gravel." If the larger ones obstruct the ureters, they become the cause of pyelitis, pyonephrosis, hydronephrosis, or abscess (Loomis).

Causes.—Renal calculi occur at all ages, and are very frequent in children before the fifth year, and from five to fifteen.

males are much more liable to them than females. A sedentary life favors their development. The nuclei of renal calculi may be pus, blood, epithelium, or grains of pigment.

Symptoms.—Usually there is an aching pain in the lumbar region and loins, which frequently shoots into the testicles, or labia, and down the inner side of the thighs; an itching at the end of the penis, and a frequent desire to urinate. The urine often contains pus, blood and tailed epithelium. The passage of a calculus along the ureter into the bladder is marked by sudden and intense pain in the region of the affected kidney, and is called renal colic. The urine is scanty or suppressed, and what is passed is of a smoky, high color, often bloody, and is discharged in drops, with a painful, burning sensation. The testicle of the affected side is retracted. When the calculus is washed into the ureter, an atrocious pain suddenly seizes the patient, who cries out, rolls from side to side, or rushes up and down the room. The face is pale and torn with agony, and the body is covered with a cold sweat. There may be nausea or vomiting, syncope or convulsions. The thigh of the affected side is benumbed (Bartholow). The paroxysm, after some minutes or hours, usually terminates suddenly by the escape of the stone into the bladder. If the calculus become impacted in the ureter it will ulcerate through and give rise to a fatal peritonitis. Gravel may occasion no distress at all, or at most some little burning at micturition. After the passage of a calculus into the bladder, it will soon be found in the urine voided, or remaining in the bladder, it increases in size, and forms a vesical calculus.

Diagnosis.—By remembering the diagnostic points the diagnosis is easy.

Prognosis.—Usually good.

Treatment.—To relieve renal colic, give morphine hypodermically, warm baths and hot poultices to the loins and abdomen. Inhalation of ether or chloroform will give relief. If gravel or sand of uric acid is present, probably the best preparation is the officinal liquor potassii citratis, of which a tablespoonful may be taken every three hours (Bartholow). The faithful use of alkaline water not only delays, but often arrests the formation of renal calculi (Loomis). The Lithia, Carlsbad,

Vichy or Ems waters are efficacious. In five-sixths of the cases the urinary concretions consist of uric acid, and this forms the red sand which quickly collects around the sides and bottom of the vessel containing the urine. The urine in these cases is always acid. In cases of uric acid gravel, the urine is too concentrated. The alkaline remedies above are indicated, with a large amount of water. The concretions may consist of the earthy salts, namely, the phosphate of ammonia and magnesia, and the phosphate and carbonate of lime. Ammonio-magnesian calculi are liable to form in cases of cystitis. These concretions are generally not renal but vesical. The urine in these cases is usually alkaline, and the mineral acids are indicated, either the sulphuric or hydrochloric. The nitro-hydrochloric acid is especially indicated in cases of oxalate of lime gravel. The ingestion of large quantities of water form a highly important part of the treatment in all cases of gravel.

PRESCRIPTIONS FOR RENAL AND VESICAL CALCULI.

R Liquoris potassæ.....3ij.
Infusi buchu.....3vij.—M.

Sig.: Three tablepoonsful an hour after meals. (When urine acid.) —Reese.

R Lithii citratis.....3ss.
Syrupi aurantii cort.....3j.
Aquæ.....ad.....3iij.—M.

Sig.: A tablespoonful in a wineglass of water three times daily. —Guy.

R Magnesii carbonatis.....3j.
Sodii biboratis.....
Acidi citrici.....aa.....3ij.
Aquæ bullientis.....3vij.—M.

Sig.: A tablespoonful three or four times daily. (When urine acid). —Bartholow.

R Acidi nitrici diluti.....
Acidi hydrochlorici diluti.....aa...3iij.
Syrupi auranti cort
Aquæ aurantii flor.....aa.....3j.
Aquæ destillatæ.....3xiiiss.—M.

Sig.: A wineglassful three or four times daily. (When urine alkaline). —Druitt.

- R Acidi nitrici diluti
 Acidi hydrochlorici diluti aa.....℥℥xL
 Infusi serpentariæ.....℥viij.—M.

Sig.: A half wineglassful three times daily. (When urine alkaline). —Bird.

- R Ammonii benzoatis℥ii-iiij.
 Syrupi.....℥iss.
 Aquæad.....℥vj.—M.

Sig.: A tablespoonful two or three times daily. (When urine alkaline). —Seymour.

- R Strychniæ.....gr. j.
 Acidi nitrici diluti.....℥j.
 Aquæ.....℥xij.—M.

Sig.: Two tablepoonsful three times daily. (When urine alkaline). —Bird.

CARCINOMA, OR CANCER.

Is a tumor with a specific arrangement of the cells in spaces called alveoli.

Theory.—Conheim has advanced the theory of the embryonic origin of tumors, the germs of the tumor, perhaps consisting of misplaced embryonic cells, are brought by the individual into the world. They may remain dormant for a variable length of time, and then under the influence of some exciting cause, possibly an injury, may begin to grow.

Cause.—Nothing is definitely known as to the origin of cancer, in any situation, but there is one thing certain, it is a disease of advanced life, and is more apt to appear from forty to sixty than at any other period.

CARCINOMA OF THE STOMACH.

Of all the organs of the body, the stomach is most frequently the seat of cancer—more frequently than the uterus, which comes, strictly, next. As regards age, the majority of cases occur at fifty, but the disease may appear at any time from forty-five to sixty. It is very rare from thirty to forty (Bartholow). According to Loomis, the stomach, next to the liver, is the most

frequent seat of internal cancer; one-third of all the cases of primary cancer have their seat in the stomach. According to Welch, quoted by Flint, the stomach, next to the uterus, is the most frequent seat of primary carcinoma.

Cause. Hereditary predisposition is undoubtedly its most important etiological factor. Beyond this its etiology is obscure (Loomis).

Symptoms. Anorexia, nausea, vomiting, pyrosis, soreness over the stomach are the earliest symptoms. After a time the pain becomes lancinating, fixed and constant. There are three prominent causes of the vomiting: First, from obstruction. When the obstruction is at the cardiac orifice, vomiting occurs immediately after eating; when at the pylorus, the food is retained for one or two hours. Second, from irritation. Third, from fermentation. The absence of hydrochloric acid from the gastric juice is held to be an infallible sign of cancer. When the cancer ulcerates, the most constant symptom is hemorrhage ("coffee-ground" vomit). The stools have a dark, tarry appearance. Emaciation, debility, haggard look, and yellow skin are often present. By palpation, a hard, irregular and nodulated tumor may be discovered.

Differential Diagnosis. Cancer of the stomach may be mistaken for gastric ulcer, and abdominal aneurism. Ulcer of the stomach occurs most in young adults, especially females, while cancer is seldom met with in persons under forty. In cancer there is usually a history of hereditary cancer. The pain in cancer is continuous, and described as lancinating; while in ulcer the pain is intermittent, greatly increased by taking food. Hematemesis, in cancer, has a sooty or "coffee-ground" appearance, is small in amount, and appears late in the disease, while in ulcer it is bright red arterial blood, is profuse, and appears as an early symptom. Vomiting in cancer does not relieve the pain, and is not very severe; but in ulcer it is severe, and relieves the pain. The presence of an epigastric tumor establishes the diagnosis of cancer. An aneurismal tumor is smooth and ovoid; a cancerous tumor is hard and irregular. In aneurism, there is an expansile pulsation, while in cancer this impulse is lifting in character (Loomis).

Prognosis.—Is always unfavorable. Its shortest duration is seven weeks, and its longest three and one-half years, the average being one year (Loomis).

Treatment.—Is altogether palliative. As to diet, milk and beef juice are the best. The burning pain is much diminished by washing out the stomach once a day with the stomach pump. Bartholow recommends equal parts of pure carbolic acid and tincture of iodine, of which one or two drops may be given in water three times daily. For the pain, give morphine hypodermically. Arsenic, in the form of Fowler's solution, one or two drops, three times a day, has power to allay pain and retard the growth.

CARCINOMA OF THE INTESTINE.

Cancer of the intestine is usually primary. The rectum is its most frequent seat, then the anus, the cæcum, the sigmoid and the colon (Loomis).

Cause.—The cause is obscure. It is a disease of advanced life (after forty). Males are affected three and a half times oftener than females.

Symptoms.—There are pains in a fixed situation, a gradually developing cachexia, and the presence of a tumor. The pain at first is slight, then acute and sharp. The patient declines in strength and weight, has a feeling of fatigue, a fawn-color complexion, bluish-white lips, a skin dry, wrinkled and scurfy. In cancer of the stomach and intestines the patients usually suffer from a profuse salivary flow without apparent cause. Constipation is the rule (Bartholow). In cancer of the rectum, hard nodular masses may be felt.

Prognosis.—Is always unfavorable. A fatal termination will be reached in a year or two.

Treatment.—The treatment is only palliative. The pain must be relieved by morphine, hypodermically. The diet should consist of milk, nutritive broths, eggs, etc. Arsenic may relieve the pain and retard the growth (Bartholow). The formation of an artificial anus is a surgical means of prolonging life.

CARCINOMA OF THE LIVER.

Cancer of the liver may be either primary or secondary. It is secondary to cancer of the stomach in one-half of the cases. It has been estimated that one out of every one hundred persons has cancer of the liver (Loomis).

Cause.—The cause is unknown. Hereditary predisposition exists in most cases. It occurs most often between the ages 40 and 65. Medullary cancer of the liver sometimes occurs in early life.

Symptoms. The patient gradually loses flesh and strength. He complains of a sense of weight and fullness in the region of the liver. The pain soon becomes lancinating, and is localized to some point over the liver, which is tender to pressure. There is loss of appetite, flatulence, nausea, vomiting. Jaundice is present in one-half of the cases. Ascites occurs more frequently than jaundice. Edema of the feet comes on late. The temperature is normal or sub-normal. Palpation discloses an enlarged liver, tender to pressure, with hard, smooth nodules over its surface (Loomis).

Prognosis.—Cancer of the liver is a fatal disease. The average duration is about one year (Loomis).

Treatment.—Is palliative. Regulate the diet. Relieve pain by a hypodermic of morphine. There is no remedy for cancer in any situation. Ascites will require attention by tapping.

CARCINOMA OF THE KIDNEY.

Cancer of the kidney may be primary or secondary.

Causes. The cause is obscure. It occurs in early life, before five, and in old age.

Symptoms. There is gradual emaciation, soreness in the lumbar region, and hæmaturia.

CARCINOMA OF THE LUNG.

Cancer of the lung is usually secondary, and very often succeeds to cancer of the breast removed by amputation. It may be primary, but rarely so. It is a disease of advanced life and is extremely rare before forty (Bartholow).

Cause.—The cause is obscure. Hereditary predisposition is a most influential factor.

Symptoms.—There is usually pain in the chest and a cough accompanied by a muco-hemorrhagic expectoration resembling currant jelly (Loomis). There is dyspnoea, emaciation, fever, night-sweats, with failure of strength, and hæmoptysis.

Prognosis.—Is always unfavorable.

Treatment.—Is altogether palliative, and is restricted to the relief of symptoms.

CARCINOMA IN OTHER ORGANS.

Cancer of the arteries, brain, gall-bladder, heart, tongue, larynx, œsophagus, mediastinum, pancreas, pericardium, plura, and spleen is met with. In some cases it is primary, in others secondary. The cause is obscure. The prominent symptoms are pain, the cancerous cachexia, and a tumor. The prognosis is unfavorable, and the treatment is only palliative.

CARIES.

Is inflammation and ulceration of bone; while necrosis is it is death en masse. Bones of spongy texture are more frequently attacked by caries than such as are compact. The bones of young persons are more often the seat of caries than those of old subjects. On examination, the bone is found to be soft and dark red; its cells are filled with a reddish, serous, glary fluid, or with soft granulations of feeble vitality. It is always vascular and readily bleeds on being touched. It is occasionally painful.

Causes.—The predisposing cause is some constitutional disorder, scrofula, or syphilis. The exciting cause may be a blow or injury.

Treatment.—Correct the constitutional disorder and give tonics, fresh air and baths. The usual remedies employed in scrofula and syphilis are indicated. Locally, the best treatment is to freely expose and remove the diseased portion of bone.

PRESCRIPTIONS FOR CARIES.

- R Cupri sulphatis.....
 Zinci sulphatis.....aa partes.....xv.
 Liquoris plumbi subacetatis
 partes.....xxx.
 Aceti..... partes.....CC.—M.
 Sig.: To be injected through the sinuses. —Villate.
- R Syrupi calcis lactophosphatis.....℥viiij.
 Sig.: A dessertspoonful to a tablespoonful three times daily.
 —Bartholow.

Cod-liver oil should be given to promote constructive metamorphosis (Bartholow).

CARBUNCLE. (See Anthrax).

CATARRH (Nasal, called, also, Coryza).

Is a catarrhal inflammation of the nasal mucous membrane. It is commonly called "cold in the head."

Causes.—Atmospherical causes are the most frequent and influential. The exposure of the neck to a current of cold air, of the feet and ankles to cold and dampness, passing from a warm to a cold atmosphere, and from a cold to a warm atmosphere suddenly, are among the most usual causes. Irritating gases and vapors or dust may cause coryza. Epidemic influence now and then prevails on an extensive scale (Bartholow).

Symptoms.—Taking cold in the head is announced by chilliness, weariness, headache, and general muscular soreness. An intense hyperæmia is the first change, with an arrest of secretion. This is soon followed by swelling of the membrane, and the nose feels dry, stuffed and uncomfortable, and an inclination to sneeze is often felt. Presently the nose pours out an abundant watery and saline discharge. The discharge soon assumes a purulent character. The voice has a nasal tone. The acute

m terminates in fourteen days. The chronic may last for years. The discharge of the chronic form consists of greenish, offensive pus, or scales. If the mucous membrane is destroyed by ulcerations, and caries of the bone has occurred, the case is then called ozæna (Bartholow).

Treatment.—Where there is a strumous diathesis cod-liver oil, the phosphates, iodide of iron, etc., should be employed. To abort an acute attack by the administration of a full dose of quinine (gr. xv.) and morphine (gr. ss.) for an adult. When established, the best remedy is Lugol's solution, liquor iodi compositus, one drop every hour or two. If there is fever, one drop of tincture of aconite root every hour will prove efficient. If the secretion is watery and profuse, tincture of belladonna may be given with the aconite, two drops every two hours. In the local treatment of chronic catarrh, the post-nasal syringe and tepid water containing a little common salt are the best materials for cleansing the passage. The tincture of iodine and carbolic acid may be readily volatilized and inhaled from a small bottle. A cocaine tablet containing gr. $\frac{1}{4}$ in the form of a flattened disc, introduced alongside the septum, one on each side, twice or three times daily, is more successful. Very dilute solutions of chlorate of potassa, chloride of ammonium, sulphates of zinc, cadmium and copper, and acetate of lead, may be tried (Bartholow).

According to Bartholow, the most effective application is a powder composed of tannin and iodoform (3i.-gr. x.) applied by means of an insufflator. Dobell's is an efficacious cleansing solution in chronic nasal catarrh, hypertrophic nasal catarrh, atrophic nasal catarrh, and fetid nasal catarrh (ozæna).

PRESCRIPTIONS FOR NASAL AND FAUCIAL CATARRH,

R Cocaine muriategr. vj
Bismuthi subcarbonatis.....5ss.
Talc.5iss.—M.

Sig.: Enough to cover a silver five cent piece, insufflated into each nostril every two hours. (For acute coryza). —Sajous.

R Tincturæ aconiti radice3j.
Tincturæ Belladonnæ.....3ij.—M.

Sig.: Three drops every hour. (Pharyngitis and acute tonsillitis). —Ringer.

R Chloroformi.3ij.

Glycerinæ.....

Spiritus vini galici.....aa.....3j.—M.

Sig.: One teaspoonful in water every three hours. (For acute coryza). —Sajous.

R Acidi carbolici liq.....℥xxx.

Sodii biboratis.....

Sodii bicarbonatis.....aa.....3j.

Glycerinæ.....3iiss.

Aquæ.....q. s., ad., ft.....3iv.—M.

Sig.: To be used with atomizer. (Simple chronic rhinitis). —Dobell.

R Sodii bicarbonatis.....3j.

Sig.: Insufflate or apply with the finger to the inflamed tonsil. (Tonsillitis). —Gine.

R Resorcingr. v.—x.

Aquæ destillatæ.....3ij.—M.

Sig.: Used with atomizer twice daily, four minutes each time. —Masini and Massei.

CATARRH. (Chronic Gastric.)

Causes.—In many persons there is an hereditary tendency after middle life, to chronic gastric catarrh. The principal general cause of this affection is anæmia. The most common local cause is the daily use of alcoholic stimulants. Diseases of the liver, heart and lungs which offer an obstacle to the venous return, will induce chronic gastric catarrh. Highly-seasoned foods, condiments, sauces, hasty and insufficient mastication, the frequent use of ices, and overfeeding are the principal causes. The prolonged use of arsenic, mercury, cubebs and purgatives often causes it. Finally, scrofula, syphilis and gout predispose to it (Bartholow and Loomis).

Symptoms.—After taking food, the patient has a feeling of weight, or fullness, sometimes of pain. Sometimes when the stomach is empty, sometimes when it is full, the pain is greater. The symptoms of indigestion are usually present. There may be loss of appetite, nausea, vomiting of acid mucous in the morning or after meals. It is this acid material belched up into the œsophagus that causes "heart-burn." There is gaseous disten-

tion of the stomach. Palpitation, headache, and vertigo may be present.

Treatment.—Regulation of the diet is the most important in all stomach diseases. When the starches, sugars and fats reach the stomach, fermentation begins. To exclude these articles, then, is the first step toward a cure. A curative measure of the highest importance is the "skim-milk cure," which consists in the exclusive use of milk, about four ounces every three hours, for some time. The stomach pump is very effective for cleansing the stomach in these cases. One or two drops of Fowler's solution, three times daily before meals, continued for a month or more, is a remedy of the highest importance. When there is much acidity it may be checked by muriatic acid given before meals. Carbolic acid alone or with bismuth relieves the fermentation and gaseous eructations (Bartholow).

PRESCRIPTIONS FOR CHRONIC GASTRIC CATARRH.

R Liquoris potassii arsenitis.....3ss.

Sig.: One or two drops before meals. (Vomiting of drunkards.)
—Bartholow.

R Extracti hydrastis fluidi.....3ss.

Sig.: Five to fifteen drops before meals in water, to be continued some time. —Bartholow.

R Tincturæ cinchonæ comp.....3iv.

Tincturæ capsici.....3ss.

Tincturæ mucis vomicæ.....3ij.—M.

Sig.: A teaspoonful every two or three hours. (To allay the craving for alcohol.) —Loomis.

R Tincturæ opii dedoratæ.....gtt. xvj.

Bismuthi subnitratæ.....3ij.

Syrupi simplicis.....3iv.

Aquæ cinnamomi.....3iss.—M.

Sig.: Shake bottle. Give one teaspoonful every two to four hours. (For child one year old.) —J. Lewis Smith.

CHANCER.

I. Induration of Syphilitic Chancre.—Can always be felt when present, and in well marked cases it is absolutely pathognomonic. It exists in three varieties: 1. A thin superficial layer of induration, aptly called “parchment-like,” exactly underlying the ulceration. This is the commonest form. 2. The induration may resemble a split pea, situated exactly beneath the ulcer, which is upon its flat surface. This induration is easily felt, is little or not at all sensitive, freely movable over the parts beneath, hard like bone or wood, feels elastic, is sharply defined, ends abruptly. 3. The induration may be very extensive, far surpassing the bounds of the ulceration placed upon it, excavated or convex upon its surface. The skin over it is not usually red. Induration is usually greatest in chancres of the skin, lips, nipples, behind the corona glandis, and near the frænum of the penis. In spongy tissue like the glans penis, the induration is often very slight. Again, when a syphilitic chancre becomes phagedenic, it loses its induration at once. The induration may precede the ulceration or follow it. In the latter case it comes on during the first week. Usually any form of induration will outlast the ulceration, remaining for two or three months, or more rarely for years. Ricord records one case of thirty years standing (Keyes).

II. Ulceration of Syphilitic Chancre.—Properly, syphilitic chancre does not ulcerate. It consists, in more than half the cases, simply of an excoriated surface, looking red and bloody, very superficial, frequently scabbed when exposed to the air. Indeed, it may never even excoriate, the lesion consisting in a simple indurated tubercle, which scales off a little at the top. But chancre of the genitals rarely escapes more or less inflammation, hence it is the rule to find some shallow, occasionally deep, ulceration. When shallow, the ulcer is round or oval, with slanting borders, often a red base. When deep, the borders are never abrupt, as in chancroid, but always sloped off. The cavity is funnel-shaped. Sometimes the induration left behind on the healing of a chancre re-ulcerates (Keyes).

III. Character of the Discharge.—Pus does not form as such on true syphilitic chancre, unless it be inflamed. Ordinarily the discharge is sero-purulent or purely serous, often bloody (Keyes).

IV. Pain.—In unirritated syphilitic chancre, as a rule, there is absolutely no pain. A patient often carries a chancre some time without knowing it, and sometimes it comes and goes without being discovered at all. In this way may be explained many singular cases of undoubted syphilis, apparently not preceded by any primary lesion (Keyes).

V. Cicatrix.—The scar left by chancre varies. In a number of cases, there is no scar left behind. The scars left are at first discolored, of a dark, vinous hue, like the color of raw ham. This color may be followed by the true copper-colored. The scar is finally whiter in the center than the surrounding skin (Keyes).

VI. Inoculation.—Auto-inoculations of chancre-secretion have been performed without number, the result having been invariably negative, unless the chancre had been previously irritated, or producing pus. Under such circumstances, the pustule and ulceration produced would be the same as the pus of any indifferent abscess would cause. The difference between the inoculation of chancroid and syphilitic chancre is illustrated in the famous case of Lindmann, who inoculated himself a number of times with chancroid pus, always with success, but with no syphilis; finally, believing himself protected (*i. e.*, syphilized), he inoculated himself with matter taken from the ulcerated tonsils of a syphilitic friend. This was followed on the eleventh day by a papule. The papule ulcerated slightly, and in forty-five days a general syphilitic eruption appeared. Lindmann inoculated himself twenty-seven hundred times with chancroid matter. Warnery, under the same “syphilization” delusion, inoculated himself many times with chancroid matter, which took, but produced only local ulcers. Finally he employed the syphilitic virus once, and an indurated chancre appeared, after twenty-seven days incubation, followed by syphilis in due course. Danielssen, a believer in “syphilization,” inoculated a man, who had elephantiasis, two hundred and eighty-seven times with

chancroid; after this it would not take (*i. e.*, he was "syphilized"). Now, one inoculation was made with true syphilitic virus. An indurated syphilitic chancre appeared, and in sixty-eight days a general syphilitic eruption followed (Keyes). The course of syphilitic chancre observed by hetero-inoculation is as follows: "There may be a pustule which soon heals. No change occurs for a period varying from ten to thirty-nine days; then the first signs of chancre appear, not as in chancroid by a pustule, but as an indurated papule of a dark color without pain, followed by syphilis.

There is one source of error in regard to vaccinal syphilis; namely, that the vaccinal fever may develop latent, possibly unsuspected syphilis from which a child is already suffering by inheritance, or previous contagion. Here the vaccination will always be accused of being the cause of syphilis. The distinction is easy. If vaccination develops latent syphilis, it does so as a blister would, and a general eruption comes on quickly; whereas in true vaccinal syphilis, there is first a period of incubation, then a local chancre, then indurated glands, and after a second incubation, a general syphilitic eruption (Keyes).

VII. Duration of Syphilitic Chancre.—Is from two weeks to several months. In about fifty per cent. of the cases a general syphilitic eruption appears before the chancre has cicatrized.

VIII. Number.—Syphilitic chancre is most often unique, because commonly only one point is inoculated. When multiple, however, it is usually so from the first, because its secretion is not auto-inoculable.

IX. Size.—Syphilitic chancre may occasionally reach a large size, as large as a quarter or a half dollar. This is, however, exceedingly rare. It is often as small as a split pea and sometimes smaller. In size and general appearance it compares unfavorably with its more formidable-looking rival, chancroid.

X. Situation.—Syphilitic chancre occurs indifferently on all points of the body. No regions are exempt from it. Syphilitic chancres of the head, face and breast are common, and reach their full size. Chancre of the lip is particularly prominent, large, hard, and chronic in its course. The genitals are the favorite seat, because they are most often exposed. Urethral

chancre is not very common. It may simulate gonorrhœa in its discharge, but when the eruption appears, the diagnosis will be easy.

XI. Form of Syphilitic Chancre.—Syphilitic chancre appears after an incubation of not less than ten days, usually not till the end of three weeks, as a reddened spot, which quickly excoriates; or as an elevated papule, which excoriates or ulcerates. It may take any one of four forms, in the following order of frequency: 1. Erosion. 2. Ulceration. 3. Deep ulceration, funnel shaped (Hunterian chancre). 4. Indurated papule, which remains dry. Erosion is believed to include two-thirds of all syphilitic chancres. It is very common inside of the prepuce. It discharges serum and not pus. The indurated papule, which does not ulcerate, is found sometimes on the skin after inoculation, and even on the mucous layer of the prepuce. The color of these papules is a dark vinous red. The course of all the above chancres is about the same. Chancre uninflamed and unirritated is painless (Keyes).

XII. Complications of Syphilitic Chancre: Are (a) vegetations; (b) inflammation; (c) chancroid, mixed chancre; (d) transformation into mucous patch; (e) phagedena and gangrene; (f) syphilitic bubo; (g) lymphangitis.—(a) Vegetations: Warty growths are liable to spring up around syphilitic chancre of the prepuce or anus, as they are with other forms of irritative disease (chancroid, balanitis, gonorrhœa). These are rare and purely accidental. Syphilis as a poison has nothing to do with their production. (c) Chancroid may complicate syphilitic chancre and produce a "mixed sore." This sore will have the characters and qualities of both lesions. For syphilitic bubo, as a complication, see Bubo. Syphilitic Lymphangitis is a specific induration of the lymph vessels and surrounding cellular tissue. Hard, smooth and knotty cords, varying from the size of a knitting-needle to that of a goose-quill, can be felt under the skin of the penis. They are not sensitive to pressure, and the skin over them is not red. Starting in the induration of the chancre, they often do not reach to the root of the penis. There may be one or more of these cords on one or both sides of the penis. It occurs in about twenty per cent of cases.

XIII. Differential Diagnosis of (1) Syphilitic Chancre; (2) Chancroid; (3) Herpes, and (4) Ulcerated Abrasions. —

1. *Nature.* Of 1, always a constitutional affection. Of 2, always a local disease. Of 3 and 4, local. 2. *Cause.* Of 1, sexual intercourse with a patient suffering from syphilitic chancre, or some secondary syphilitic lesion of or near the genitals, vaccination with syphilitic blood, accidental inoculation of any vehicle containing the syphilitic virus upon an abrasion of any portion of the body. Of 2, sexual intercourse with a patient suffering from chancroid of or near the genitals, accidental or designed inoculation with the secretion of chancroid. Of 3 and 4, mechanical and chemical irritation. 3. *Situation.* Of the 1, usually upon or near the genitals, frequent on the head, hands or nipple. Of the 2, very rare except on or around the genitals. Of the 3 and 4, upon the genitals. 4. *Incubation.* Of the first, constant, not less than ten days, usually three weeks. Of the 2, none after the absorption of the poison. Ulcer usually fully formed on the second or third day; very rarely commences later than the seventh. Of the 3 and 4, none. 5. *Commencement.* Of the 1, begins as an erosion or a papule, and remains an erosion or ulcerates. Of the 2, begins as a pustule or ulcer, and invariably remains as an ulcer. Of the 3, begins as a group of vesicles, and remains as an ulcer. Of the 4, begins as an abrasion or fissure, and remains as an ulcer. 6. *Number.* Of the 1, usually unique. Of the 2, usually multiple. Of the 3 and 4, generally multiple. 7. *Lesion.* Of the 1, habitually flat, or scooped out, or deep funnel shaped, or dry papule. Of the 2, always true ulcer, excavated, hollowed out. Of the 3, ulcer superficial. 8. *Edges.* Of the 1, sloping and adherent, sometimes prominently elevated. Of the 2, sharply cut, abrupt, often undermined. 9. *Bottom.* Of the 1, smooth, shining. Of the 2, uneven, warty, irregular, without luster. 10. *Color.* Of the 1, darkish red, gray or black. Of the 2, yellow, tawney, false-membranous looking. 11. *Secretion.* Of the 1, slight sero-sanguinolent. Of the 2, abundant and purulent. 12. *History.* Of the 1, not found on persons who have had syphilis. Of the 2, found indifferently upon all. Of the 3 and 4, found on patients with long and tight prepuce and uncleanness. 13. *Inoculability.* Of the 1,

not auto-inoculable. Of the 2, readily auto-inoculable producing a characteristic chancroid ulcer by the first day. 14. *Course*. Of the 1, slowly progressive. Of the 2, rapidly progressive. Of the 3 and 4, do not usually tend to get much larger than the size at which they started. 15. *Sensibility*. Of the 1, rarely painful. Of the 2, often painful. Of the 3 and 4, usually painful. 16. *Induration*. Of the 1, constant, parchment-like, terminating abruptly, insensitive to pressure, movable upon the parts beneath the skin, may remain a few days or for years. Of the 2, absent in typical cases. When present, is sensitive to pressure, shades off into surrounding tissues, is adherent to parts around. 17. *Bubo*. Of the 1, is constant. Of the 2, in two-thirds of the cases glands are unaffected. Of the 3 and 4, rare. 18. *Prognosis*. Of the 1, good for local consequences, but syphilis follows. Of the 2, no after affects. Of the 3 and 4, good. 19. *Treatment*. Of the 1, local treatment but slightly effective. Of the 2, local treatment curative. Of the 3 and 4, local treatment curative (Keyes).

Treatment of Syphilitic Chancre.—No amount of cauterization nor any local treatment can prevent the development of general syphilis after the poison has once been absorbed, much less after the chancre has appeared. Excision of the primary lesion does no good. The best local treatment consists in the use of dry lint, sprinkling with iodoform, or calomel, or the use of black or yellow wash. The internal treatment of syphilitic chancre is the same as that of early syphilis. Where there is the least shadow of a doubt, as to the diagnosis, no mercury should on any account be given until an eruption has appeared (Keyes).

PRESCRIPTIONS FOR CHANCER.

- R Hydrargyri chloridi mitis.....gr. xv.
Liquoris calcis. ʒij.—M.
Sig.: Shake and apply as a wash. (Black wash.) —Bartholow.
- R Hydrargyri chloridi corrosivi.....gr. j.
Liquoris calcis.....ʒviiij. M.
Sig.: Shake and apply on lint. (Yellow wash.) —Little.
- R Hydrargyri chloridi mitis.....ʒss.
Sig.: Dust on and cover with dry lint.—Van Buren and Keyes.

R Iodoformi
 Lycopodii—aa..... 5iij.—M.
 Sig.: Dust on and cover with dry lint. —Sturgis.

CHANCROID.

Is a local, virulent, contagious venereal ulcer, never the starting point of syphilis. Its own secretions are freely auto-inoculable.

Of the three distinct venereal diseases, gonorrhœa, chancreoid and syphilis—gonorrhœa is, strictly speaking, the most venereal, being practically never acquired except in sexual intercourse. Chancreoid, equally virulent, is less venereal, and recognizes many methods of propagation besides sexual congress. While syphilis is of all the least virulent, and the least venereal. Nothing can produce chancreoid except chancreoid (Keyes).

Cause.—It can be produced only by the contact of pus from a similar ulcer upon some portion of the skin or mucous membrane under conditions favorable for absorption. No one is exempt. The bearer of a chancreoid is just as liable to be poisoned by the pus of his own sore as is a perfectly healthy person. Lindbmann inoculated himself 2,700 times. Hence the rule, an individual may have chancreoid as often as he is exposed; there is no limit to the number of possible attacks (Keyes).

Frequency of Chancreoid. Statistics show that in dispensaries and hospitals, among the poor and dirty, the frequency of chancreoid far outranks that of true syphilitic chancre, while in the higher walks of life true syphilitic chancre is more common than chancreoid. The poor consort with the lower orders of prostitutes who have old chronic chancreoid, which forms a hot-bed of infection for all who approach. Finally, syphilitic chancre occurs but once in a lifetime, and rarely lasts long; while chancreoid may be acquired an indefinite number of times.

Methods of Contagion. By direct contact, as in sexual intercourse, or manipulation of chancreoids with fissures or abrasions on the hand, or through some intervening agency.

Situation of Chancreoid. It is rarely found far from the genitals. In the male by preference it is found in the sulcus on either side of the frænum.

Symptoms.—Chancroid has no period of incubation or hatching. When the virus is placed in a position where absorption is possible, it commences its work at once, and rapidly reaches the stage of ulceration. Usually by the third day after suspicious intercourse, occasionally as late as a week, a small ulcer will be found. It increases in size for one or two weeks, and remains stationary for perhaps two weeks, and then repair is announced by a more creamy, laudable pus. Chancroid is usually round or oval in shape. In number it may be unique, or any given number may co-exist. In size, it varies from that of the head of a pin to a large surface.

Duration.—A chancroid untreated never lasts less than a month, and may last months, or even years.

Pain.—Chancroid may be almost entirely painless, but clinically, pain is usually a diagnostic symptom of chancroid, serving to distinguish it from syphilitic chancre.

Induration.—There is no induration unless the chancroid is irritated, and then it is an inflammatory hardness.

Relapse.—A chancroid may be almost repaired, when it suddenly reinfects itself. A relapse may occur a second or even a third time.

Complications of Chancroid.—Inflammations, vegetations, phimosis, paraphimosis, lymphangitis, erysipelas, gangrene, phagedena, simple bubo, and virulent bubo may complicate chancroid.

Treatment.—Abortive. All the stronger mineral and some of the vegetable acids, and caustic alkalies, prevent the development of the chancroid if applied over the inoculated point for a considerable time—about two hours—within a period of three to twenty-four hours after inoculation. When the chancroid is once present, active caustics, such as nitric and sulphuric acids, and the actual cautery may be used. Burn every portion of every ulcer, no matter what its size. In applying nitric acid it is well to use a rather blunt glass rod. The ulcer should be thoroughly cleaned and dried with blotting paper slips. A drop of pure carbolic acid applied and then absorbed out with blotting paper makes the acid application less painful. Now the nitric acid is thoroughly applied and left on until a white rim of

dead tissue announces that the base of the ulcer is destroyed. Now the nitric acid is dried up with blotting paper slips and the surface touched with liquor potassæ to neutralize any excess of acid there may be. The burned surface is dressed dry with a little absorbent cotton. The eschar separates in a few days, leaving a healthy ulcer which heals under a dry dressing. In cauterizing a chancreoid under a tight prepuce, inflammatory phimosis may come on unless the patient be kept at rest after the cauterization. In using the actual cautery, the point should be carried down into every portion of the ulcer until a black dead eschar of the whole surface is produced. Cold-water dressing is applied afterward and anodyne given until pain has ceased. Apply a strong solution of cocaine before burning. If the ulcer has lasted only a few days, one thorough cauterization cures it. If the ulcer is already several weeks old, it will in many instances get well as quickly under iodoform, calomel, or other dressing as it will by being cauterized. Nitrate of silver does harm, since its caustic action does not extend deep enough, and superficial cauterization always makes matters worse. It is well to remember that greasy local applications to chancreoids are bad. When it is not advisable to use caustics, cover the entire surface with iodoform powder. Cleanliness is of the first importance. Dusting the surface with calomel and bismuth is a good expedient (Keyes).

PRESCRIPTIONS FOR CHANCROID.

- | | | | | | |
|-------|---|-------|-------|------|--|
| R | Iodoformi. | | | 3ij. | |
| Sig.: | Dust on sore and cover with lint dipped in glycerine. | | | | |
| | —Ringer. | | | | |
| R | Bismuthi subiodidi | | | 3iv. | |
| Sig.: | Dust on sore and use dry dressings. | | | | |
| R | Pulveris acidı salicylicı | | | 3ij. | |
| Sig.: | Dust on sore and cover with dry dressing. | | | | |
| | —Auglada. | | | | |

CHILBLAINS.

Are local inflammations of the skin, and are to be met with in subjects of a feeble circulation. They are more common in the young and in women than in men, and are generally seen on

the toes, fingers, nose or ears, and are caused by any sudden change of temperature, or any sudden application of cold or warmth. Chilblains may show themselves as simple congestions of the skin, attended with tenderness or itching; or when the inflammation is more severe, vesication, or when a broken chilblain occurs, sloughing and ulceration. Any external warmth or anything that excites the circulation in the part is apt to increase the symptoms.

Treatment.—*General*: Tonics, good diet, external warmth and exercise. *Local*: When the chilblain is not broken, the local application of the tincture of iodine, of camphor liniment, of soap liniment with opium, or of simple spirit, not only gives comfort, but hastens the cure of the disease. Turpentine and carbolic acid are most highly recommended. When the parts are broken, vaseline, and boracic acid ointment are the safest remedies.

PRESCRIPTIONS FOR CHILBLAINS.

℞ Acidi carbolicī.....gr. x.
Cosmolini
Olei terebinthinæ.....aa.....ʒj.—M.

Sig.: Apply to the affected part.

—Davidson.

℞ Linimenti chloroformi.....ʒij.

Sig.: Apply to part with gentle friction. (Early stage).

—Davidson.

℞ Tincturæ iodi... ..ʒj.

Sig.: Apply to parts with brush. (When swollen or granulated).

—Davidson.

CHLOROSIS.

Is an anæmia occurring in girls about the period of puberty. The term chlorosis relates to the peculiar tint the complexion assumes in this disease, and in common language is called "green-sickness" (Bartholow).

Cause.—Chlorosis is regarded by some as a neurosis, the blood changes being secondary to the neurosis. There is nearly always some functional derangement of the sexual organs. Self-pollution is claimed as an exciting cause of chlorosis. The patient is usually light, fair, full, round, but white, having blue

eyes, soft tissues and feeble muscles. Heredity may exist (Loomis).

Symptoms.—The patient becomes despondent or morose. The countenance assumes a peculiar waxy, yellow, or yellow-green pallor. The face is puffy, the eyes are surrounded by deep, blackish circles, and the mucous membranes are pale. There are muscular weakness, dyspnea, and fits of cardiac palpitation are common. The appetite is capricious. The patient will eat with avidity chalk, slate pencils, ashes, dirt, or strongly acid and spiced food. Cardialgia is a common symptom, and belching of gas. There may be nervousness, dry cough, etc. (Flint, Loomis and Bartholow).

Differential Diagnosis.—Chlorosis may be confounded with simple anemia, Bright's and cardiac disease. In anemia emaciation is marked; in chlorosis there is no loss of flesh. The peculiar greenish color and the mental state, the age and sex and uterine derangement will distinguish it. The examination of the urine in Bright's, and of the chest in cardiac disease will decide the question (Loomis).

Prognosis.—Its duration is very uncertain. It is not a self-limited disease, and manifests no tendency to spontaneous cure. As a rule the prognosis is very unfavorable, on account of complications such as phthisis, valvular endocarditis, and gastric ulcer (Loomis).

Treatment.—Patients should have an out-of-door life with cheerful companions and surroundings. The combinations of iron with a mineral acid are usually effective. According to Bartholow the combination of iron with arsenic is best. Strychnia and the lacto-phosphate of lime are useful. Rest, forced feeding, massage and faradization are advocated by Weir Mitchell.

PRESCRIPTIONS FOR CHLOROSIS.

R Tinctura ferri muriatis. ʒiv.
Acidi phosphorici diluti ʒvj.
Spiritus limonis. ʒij.
Syrupi. . . q. s., add ʒvj —M.

Sig.: A dessertspoonful in water after meals.

Goodell.

- R Hydrargyri chloridi corrosivigr. j-ij.
 Liquoris arsenici chloridi.3j.
 Tincturæ ferri chloridi.....3iv.
 Acidi hydrochlorici diluti 3iv.
 Syrupi.....3iij.
 Aquæad..... 3vj.—M.

Sig.: A dessertspoonful in a wineglass of water after meals.

—Smith.

- R Quininæ sulphatisgr. xx.
 Ferri sulph. exsiccant gr. xL.
 Strychniæ sulphatis..... gr. ss.—M.
 Ft. massa et in pilulas no. xx. div.

Sig.: One pill thrice daily.

—Bartholow.

CHOLERA MORBUS.

Called, also, cholera nostras, English cholera, and sporadic cholera, is an acute catarrh of the stomach and intestines, of sudden onset, and manifested objectively by vomiting and purging.

Causes.—Cholera morbus almost always occurs in July and August. Sudden checking of the perspiration, or suddenly chilling the surface of the body by external cold, or iced drinks, and sudden changes in the temperature after a heated term will produce it. Its most frequent cause is undigested food, as shell-fish, unripe fruit, cucumbers, etc (Loomis).

Symptoms. An attack usually begins at night by vomiting and purging. The matters vomited are, first, undigested food, gastric mucous and bile. The vomiting is projectile in character, and there is temporary relief after each attack. The bitter fluid leaves a burning sensation in the mouth and throat. Thirst is intense. The evacuations from the bowels are watery and profuse, and have a mouse-like odor. In some cases purging alone is present. There is intestinal colic. In all severe cases there are cramps in the lower extremities, especially in the calves of the legs and feet. The skin is cold, and covered with a profuse perspiration. Sometimes the abdominal muscles are knotted by cramps (Loomis).

Prognosis. Cholera morbus is rarely a fatal disease. The duration is from a few hours to two days, and in the rare cases

of secondary fever, to two weeks. When the patient passes into the stage of collapse, there is always danger (Loomis).

Treatment.—In mild cases ice may be given to check the vomiting, and sinapisms applied to the epigastrium. In severe cases give morphine hypodermically, and apply dry heat to the extremities. From two to five drops of diluted sulphuric acid, or the same dose of muriatic acid diluted, and the same quantity of tincture of opium should be given from every half hour to every two hours, in a sufficient quantity of ice-water. Carbolic acid alone or in mixture with bismuth, is an efficient means for arresting vomiting; besides, its properties as an anti-ferment, it has a local anæsthetic action on the terminal filaments of the nerves in the mucous membrane. One-twelfth to one-sixth of a grain of calomel will relieve the vomiting and purging. Chlorodyne is very effective (Bartholow).

PRESCRIPTIONS FOR CHOLERA MORBUS.

- ℞ Acidi nitrosi..... ʒj.
Tincturæ opiigtt. xL.
Aque camphoræ..... ʒviij.—M.
Sig.: One-fourth part to be taken every three or four hours.
—Hope.
- ℞ Tincturæ opii
Tincturæ capsici
Tincturæ rhei aromatici.....
Spiritus menthæ piperitæ.....
Spiritus camphoræ.....aa.....ʒiiss.—M.
Sig.: Twenty to forty minims, diluted. —Ruschenberger.
- ℞ Strychniæ sulphatis gr. ʒ.
Acidi sulphurici diluti,ʒss.
Morphinæ sulphatis gr. ij.
Aque camphoræq. s., ad ...ʒiv.—M.
Sig.: A teaspoonful every hour or two well diluted. (In threatened collapse.) —Bartholow.

CHOLERA INFANTUM.

Called also "summer complaint;" is an acute gastro-intestinal catarrh, occurring in children during the period of the first dentition, and characterized by vomiting, purging and fever (Bartholow).

Causes.—Early life—the first two years—is the period for cholera infantum. Bad hygiene is the great factor, including damp, ill-ventilated and confined houses, continuous high temperature, and improper food. Feeding infants the coarse food of adults, containing much starch, and artificially fed children, are most fruitful causes. It prevails more in cities than in the country (Bartholow).

Symptoms. It begins either with vomiting or diarrhœa or both. The child rejects all food, and becomes peevish. Purging is always present, and the passages are watery and greenish in color, and contain curdy masses mixed with mucus. The discharges are more or less slimy, sometimes frothy, and at first have a distinctly sourish odor. The child is constantly thirsty, and becomes stupid. The temperature is rarely above the normal. The number of passages varies from six to seventy-five in twenty-four hours. The abdomen at first may be distended, but later it is retracted and always tender. The disease usually lasts a week (Loomis).

Prognosis. -In severe cases, unfavorable.

Treatment.—In the treatment, fresh air is very important. Fresh cow's milk with barley and lime-water added is the best artificial diet; but a good wet nurse is always to be preferred. To relieve the intense thirst, the child may suck pounded ice in a linen bag. The only drug that Loomis has found efficacious in controlling the vomiting is calomel, which should be given dry on the tongue in minute doses, $\frac{1}{4}$ of a grain every half hour. Bismuth and carbolic acid are very useful; and salicylic acid is also of value in arresting fermentation. For the diarrhœa, give five or ten drops of the camphorated tincture of opium, every two hours. Camphor and brandy may be given for the purging. The vegetable astringents, such as hæmatoxylon, kino, and catechu are of service in controlling the diarrhœa. Flannels should be worn next the surface during convalescence (Loomis). According to Bartholow, a most efficient prescription is the combination of bismuth and carbolic acid—ten grains of the former and one-fourth to one-half grain of the latter, every two hours.

PRESCRIPTIONS FOR CHOLERA INFANTUM.

- R Hydrargyri chloridi mitis gr. iij
 Cretæ præp gr. xxxvi.
 Plumbi acetatis..... gr. xij.
 Pulveris ipecac gr. iij.—M.
 In chart. no. xii. div.
 Sig.: One every three hours. —Condit.
- R Olei ricini ℥ij.
 Pulveris acacia
 Sacchari albi—aa. ℥ij.
 Tincturæ opii..... ℥xxi.
 Aquæ cinnamomi—q. s ad. ℥iv.—M.
 Sig.: A teaspoonful every two or three hours. —West.
- R Hydrargyri cum cretæ..... gr. ij.
 Sacchari lactis. gr. x.—M.
 In pulv. no. xii. div.
 Sig.: A powder every hour. —Ringer.
- R Potassii bromidi. ℥ij.
 Syrupi simplicis..... ℥ss.
 Aquæ menthæ piperitæ ℥iss.—M.
 Sig.: A teaspoonful every hour or two (when cerebral congestion). —Bartholow.
- R Tincturæ opii deodorat gtt. xvj.
 Spiritus ammon aromat ℥j.
 Bismuthi subnitrat ℥ij.
 Syrupi simplicis..... ℥iv.
 Misturæ cretæ..... ℥iss —M.
 Sig.: Shake well and give a teaspoonful every two or three hours to a child 8 to 12 months old. —J. Lewis Smith.

CHORDEE.

Is a gonorrhœal, painful, down-curved erection.

Causes.—When the inflammation is severe, and has extended from the mucous membrane into the delicate meshes of the erectile tissue of the corpus spongiosum, the erections are painful. In this condition the corpus spongiosum does not allow complete distention of its areolæ, and hence the urethra is comparatively too short for the erect corpora cavernosa and bends the penis downward like a bow during erection. If the corpora

cavernosa should become inflamed and the corpus spongiosum escape, the arching would be in the opposite direction.

In chordee, great pain is felt from the stretching of the inflamed erectile tissue. This pain is measurably relieved by bending the penis so as to increase the bow. Chordee is most frequent during the night and toward morning.

The pernicious practice of "breaking the chordee," which consists in roughly straightening the penis when erect, gives rise to a hæmorrhage which may become excessive, and be the starting point of organic stricture.

Treatment.—The best course is for the patient to keep his urine dilute and alkaline, avoid lascivious thoughts, and resort to prolonged immersions of the penis in very hot water before retiring. He should sleep lightly covered, on his side, on a hard bed, after a small evening meal, in a cool room. Bromide of potassium, in doses of from thirty to sixty grains at night in water, repeated once if necessary, will control chordee in some cases. In other cases morphine is the best. When a patient wakes with chordee, the penis should be plunged into the coldest water which is at hand, or what is better, if it is winter, laid along a piece of iron, or other metal which has been exposed to the cold. Lupulin in doses of from thirty to sixty grains in powder with sugar, is of undoubted service in chordee.

PRESCRIPTIONS FOR CHORDEE.

R Extracti opii aquosgr. iss.
Olei theobromægr. xxx.—M.

Ft. suppositor no. 1.

Sig.: Introduce into the rectum on retiring.

—VanBuren and Keyes.

R Spiritus camphoræ..... ʒj

Sig.: One teaspoonful at bed time in water.

—Milton.

R Potassii bromidi..... gr. xv.-xx.

Chloral hydratisgr. v.

Spiritus vini galliciʒij.

Spiritus camphoræ.....℥x.

Aquæ menthæ piperitæʒj.—M.

Sig.: Give at bed time.

—Milton.

R Extracti opii aquos..... gr. ij.
 Pulveris camphoræ..... gr. iv.—M.

In pil. no. ii. div.

Sig.: One or both on retiring. —VanBuren and Keyes.

CHOREA.

Called also St. Vitus's or St. Guy's dance, is a disease of the nervous system, which is characterized by irregular and involuntary muscular movements, without loss of consciousness (Smith).

Age.—Chorea may occur at any period of life, but a large majority of the cases are in childhood. The maximum frequency of chorea is between the sixth and tenth years.

Causes.—All writers admit that there is often an inherited predisposition to chorea. The disease usually makes its appearance about the second dentition, or at puberty. Rheumatism, intestinal worms, sexual abuses, amenorrhœa, anæmia, and strong moral emotions, are frequent exciting causes. Fright, shock, and extreme mental labor or any form of severe nervous disturbance may act as an exciting cause. It may be produced by unconscious imitation, as has been shown in schools. Girls are more liable to it than boys. Dysmenorrhœa and pregnancy are causes (Smith, Flint, and Loomis).

Symptoms. Chorea is partial or general. It is partial when it affects a few muscles or groups of muscles; general when all the muscles are involved. Speech may be impaired or lost. Locomotion may be impossible. The movements of chorea are increased when the patient is conscious of being observed, and under any emotional excitement, and are usually on the left side. The affection is not accompanied by fever. Anæmia often co-exists. Irritability of temper is a notable feature. The mental faculties are weakened. The affection usually comes on gradually. Tenderness of the spine is a constant symptom. In the severest cases sleep is disturbed. The duration varies from a few weeks to several months; the average is between two and three months (Smith, Flint and Loomis).

Prognosis. Complete recovery is the rule, but relapses frequently occur.

Treatment.—A number of remedies have been advocated as affecting a cure of this disease. In general, when different methods of treatment of any disease are found to be successful, it is a fair inference that the disease ends favorably from an intrinsic tendency (Flint). If there be rheumatism, anæmia, and constipation, each one demands its appropriate treatment. Fowler's solution, in doses of three or four drops three times daily, is very efficacious. Iron, zinc, strychnia, opium and cannabis indica are useful. The application of the ether spray to the spine for four or five minutes at a time daily or on alternate days has been found efficacious. Children with chorea should not go to school. Excellent results have been obtained by confinement to bed in a darkened and quiet room, and a careful but generous diet (Bartholow). Morphine and chloral may be given to produce sleep. Galvanization and faradization are serviceable. Cod-liver oil and the hypophosphates are useful remedies. The iodide of iron is good in some cases (Smith, Flint, and Bartholow).

PRESCRIPTIONS FOR CHOREA.

R Chloral hydratisʒvj.—viij.

Syrupi aurantii cortʒiij.—M.

Sig.: A teaspoonful three times daily for one or two months.
(Child ten years old.) —Joffrey.

R Eserinae sulphatis.....gr. j.

Aquæ destillatæ.....ʒvj.—M.

Sig.: Six minims hypodermically twice daily, with tonics.

—Riess.

COLIC. (Intestinal.)

Includes all painful affections of the intestines which are not caused by structural changes in the intestinal wall (Loomis).

Its varieties are flatulent, bilious, lead, copper, gouty, and rheumatic colic. It is a purely functional affection, and is attended by irregular spasmodic contractions of the muscular coat of the intestine.

Causes.—It occurs most frequently in the young. Neurotic temperaments and a sedentary mode of life, rheumatism, chronic

alcoholismus and gout predispose to it. Malaria, syphilis and liver derangements may produce it. Cold feet is often its exciting cause. Direct irritation of the bowels by undigested food, certain articles of food, as cucumbers, shell-fish, strawberries, etc., will cause colic in some persons. Gaseous collections and distention of the intestine by fæces, or by bundles of worms, sometimes excite it. Lead and copper cause colic (Loomis).

Symptoms.—The attack itself comes on suddenly. In flatulent colic, there is a severe twisting, paroxysmal pain around the umbilicus, or in the region of the colon. The abdomen becomes distended with the flatus, the bowels are constipated, eructations and borborygmi are present, and there may be vomiting. Steady pressure over the abdomen relieves the pain. There is no rise of temperature, the surface, if the pain is severe, is cold and covered with clammy perspiration. On palpation during a spasm, the intestine at points may be felt rigid and hard. Flatulent colic is often called crapulous, when it follows a too hearty meal, or the food indigestible. Crapulous colic is accompanied by pains in the head and dimness of sight, sometimes by urticaria and roseola. Flatulent colic is most frequently met with in infants. Bilious colic is accompanied by nausea and vomiting, the vomited matters being greenish and yellow. It is preceded by nausea, anorexia, and a coated tongue. It sometimes begins with a chill. The bowels are obstinately constipated. Bilious colic occurs in summer and autumn. Lead colic, or colica pictonum, comes on with moderately severe paroxysms of pain. The pain is located about the umbilicus, and is twisting or grinding in character. The abdomen is contracted and hard; knots of rigid intestine can sometimes be felt, and pressure somewhat relieves the pain. An individual suffering from lead poison is sallow, anæmic, and often the extensors of the forearm are paralyzed, and along the edge of the gums is a deep blue dotted line composed of lead.

Prognosis.—Is always favorable.

Treatment. Will depend upon the cause. Usually purgatives are indicated. In all forms opium, chloroform, hydrate of chloral or ether may be given to relieve the pain and spasm. In hysterical and nervous subjects, at the outset of the attack,

man's anodyne, asafoetida, valerian and the essential oils quickly relieve the pain and remove the flatus. In children, bromide of potassium in carminative waters often affords ready relief. Gouty colic is best treated with oil of cajuput, and carminatives. The feet are to be placed in a mustard bath, and a mustard plaster is to be placed on the abdomen. In lead colic, opium is the most efficient remedy. It will often relieve the constipation. A milk diet acts as a prophylactic and curative agent (Loomis). Twenty drops of chloroform, repeated, if necessary, at short intervals will sometimes afford prompt relief in severe cases.

PRESCRIPTIONS FOR COLIC.

- ℞ Syrupi rhei aromatici.....
 Tincturæ opii camphoratæ
 Tincturæ cardamon comp.....
 Aquæ cinnamomi.....aa.....ʒj.—M.
 Sig.: Two to four teaspoonsful. (For crampulent colic.)
 —Hartshorne.
- ℞ Magnesii carbonatisgr. xl.
 Sacchari albiʒiss.
 Tincturæ asafoetidæ.....ʒiss.
 Tincturæ opii.....ʒss.
 Aquæʒiss.—M.
 Sig.: Five to sixty drops, according to age. (In infantile colic.)
 —Dewees.
- ℞ Spiritus chloroformi.....
 Tincturæ cardamonii.....aa.....ʒij.—M.
 Sig.: A teaspoonful every half hour till relieved. —Bartholow.
- ℞ Tincturæ opii deodorat...gtt. xii.
 Magnesii calcinat.....gr. xii-xxiv.
 Sacchari albi.....ʒj.
 Aquæ anisi.....ʒiss.—M.
 Sig.: Shake well. One teaspoonful to a child one year old.
 —J. L. Smith.

CONDYLOMATA.

Are fleshy, syphilitic excrescences about the anus or pederanus. They must not be mistaken for warty excrescences, or vegetations, which, although common in syphilitic subjects, have nothing specific about them. Vegetations or warty growths are

liable to spring up around syphilitic chancre of the prepuce or anus, as they are with chancroid, balanitis, gonorrhœa, or any irritation. They are purely accidental. Syphilis, as a poison, has nothing to do with their production. Vegetations upon the penis are commonly called venereal warts; but as they are nothing more than papillary overgrowths, caused by irritating fluids, or simply by lack of cleanliness, the title is not exact. They are not influenced like condylomata, by anti-syphilitic treatment, and are often cured by mere attention to cleanliness. There is a contagious element about warts (Keyes). In children they seem to come from irritation of worms (Bryant).

PRESCRIPTIONS FOR CONDYLOMATA AND WARTS.

- R** Acidi nitrici.....3j.
 Aquæ.....O. j.—M.
 Sig.: Use frequently as a wash. —Ringer.
- R** Acidi chromici.....gr. c.
 Aquæ destillatæ3j.—M.
 Sig.: Apply locally with match or glass rod. —Bartholow.
- R** Hydrargyri chloridi corrosivi.....gr. x.
 Collodii3v.—M.
 Sig.: Paint the wart once daily. —Kaposi.
- R** Acidi nitrici.....3ss.
 Sig.: Apply to wart with match three or four times a week.

CONJUNCTIVITIS.

Is an inflammation of the conjunctiva. There are several varieties, but the most common forms which the general practitioner will meet, are hyperæmia palpebralis, and simple or catarrhal conjunctivitis.

Causes.—Nasal catarrh, various forms of eye-strain, “hay fever” or “rose cold.” Whatever makes vision difficult excites this hyperæmia. We see it in those who use their eyes to excess; in those who have wept extremely; in those who have errors of refraction, and in those who work in dust. The causes of simple or catarrhal conjunctivitis are atmospheric, ill-ventilated rooms, exposure to dust, smoke and heat. It is apt to

occur at the seaside in summer, from heat, glare and dampness. Workers at the forge, millers, cigar-makers and moulders are its special subjects. It occurs as a symptom in coryza, measles, scarlatina, variola and varicella (Noyes).

Symptoms.—The symptoms are worse at night and are aggravated by use of the eyes. There is heat, and burning pain, with pricking and itching and a constant sense of heaviness and of sand in the eyes (Noyes).

Treatment.—Ascertain and remove the cause. Half teaspoonful of common salt to a pint of water, and a teaspoonful of "Pond's extract" to a tumbler of water, are applications in popular use (Noyes). Bathing the eyes with hot or cold water just before bed-time is useful.

PRESCRIPTIONS FOR CONJUNCTIVITIS.

- | | | | |
|-------|--|------------|---------|
| R | Sodii biboratis pulveris..... | ℥j. | |
| | Aquæ camphoræ..... | ℥vj.—M. | |
| Sig.: | Bathe the lids and drop into the eyes morning and evening. | | —Noyes. |
| R | Acidi borici..... | ℥j. | |
| | Aquæ | ℥vj.—M. | Or |
| R | Zinci sulphatis..... | gr. ij. | |
| | Aquæ..... | ℥iv.—M. | Or |
| R | Extracti opii fluidi..... | ℥ij. | |
| | Aquæ..... | ℥iv.—M. | |
| Sig.: | Drop into the eyes morning and evening. | | —Noyes. |
| R | Argenti nitratis..... | gr. ij.—v. | |
| | Aquæ destillatæ..... | ℥j.—M. | |
| Sig.: | Two drops in the eye daily. (In granular conjunctivitis.) | | —Noyes. |

CONSTIPATION.

Is a relative term, for some perfectly healthy persons have only one movement from the bowels every second or third day, while others have two stools daily. Cases are recorded where periods of three months have elapsed between two successive movements, and yet the individual was apparently in good health (Loomis).

Causes.—In those accustomed to large doses of opium the bowels have been known to move only four times in a year. Abuse of laxatives, diseases of the brain and spinal cord, liver, heart, diabetes, general anæmia and chlorosis, anxiety and prolonged mental labor are causes. A sedentary life, the feeble, infirm, the bed-ridden, child-bearing, and old age, are predisposing causes. Disregarding the calls to evacuate the bowels, the use of food leaving no residuum, deficiency of the gastric and intestinal juices, impaired muscular contractility and loss of peristaltic movements are causes (Loomis).

Symptoms.—The patient complains of sense of fullness in the rectum, with flatulence, headache, vertigo, a foul breath and anorexia. Eruptions such as psoriasis, eczema, prurigo, erythema and urticaria often appear upon the surface. There are flushings of the face, dark rings around the eyes, and sometimes palpitation. A distended colon may cause pain which is located either in the chest, bladder, groin, ovaries, testicles, loins or lower extremities (Loomis).

Treatment.—For temporary constipation Epsom, or Rochelle salts are efficient. For habitual constipation, regular hours for the evacuation of the bowels, articles of food which leave a bulky residue, as cracked wheat, oatmeal and fruits which have fine seeds, as figs, strawberries and prunes sweetened with molasses are sometimes very efficient. A goblet of hot or cold water just before retiring and on rising will often be of service. Daily exercise in walking or horseback riding, friction and kneading of the abdomen and the galvanic, and faradic currents are efficient means.

PRESCRIPTIONS FOR CONSTIPATION.

- | | | |
|-------|-------------------------------------|--------------|
| R | Extracti cascariæ sagradæ fluidi... | |
| | Elixir simplicis.....aa..... | 3ij.—M. |
| Sig.: | Two teaspoonsful at bed time. | —Bartholow. |
| R | Extracti nucis vomicæ | |
| | Pulverus piper. nig.....aa..... | gr. xx. |
| | Pil. colocynth comp..... | gr. l.—M. |
| | In pil. no. xx. div. | |
| Sig.: | One every night or second night. | —Fothergill. |

R Pulveris aloes socot.....gr. vij.
Pulveris rhei.....gr. xxiv.
Extracti belladonnæ.....gr. i.—M.

In pil. no. xii. div.

Sig.: One or two pills as required.

—DaCosta.

CONVULSIONS.

Spasm is sometimes used synonymously with convulsion; but there is this difference: the word spasm is used when we wish to express the idea of less extensive muscular contraction; and convulsion, when the disorder affects the muscles of the whole body. Spasms may be clonic or tonic, and so may convulsions. Convulsions may be accompanied by a loss of consciousness and sensibility, as in epilepsy or not so as in tetanus. When convulsions occur in children, as they often do from reflex irritation during teething, from disordered digestion or from poison in the blood, they are then called infantile convulsions. Children often have convulsions as the precursors of febrile diseases. Convulsions may be symptomatic of any cerebral disease (Loomis).

Treatment.—The discovery of a cause will indicate the treatment. Belladonna and the bromides may be used. Hot baths, counter-irritants to the back and neck, or cold to the head, are often of service. Chloroform is the most appropriate agent for controlling the spasms temporarily (Loomis).

PRESCRIPTIONS FOR CONVULSIONS.

R Olei ricini.....ʒj.

Sig.: A teaspoonful or two according to age. (When due to indigestion.)
—Witherstone.

R Ætheris fort.....ʒiv.

Sig.: To be used as an inhalation until paroxysm is broken.
—J. L. Smith.

R Misturæ asafoetidæʒij.

Sig.: A tablespoonful as an anema.
—Waring.

R Potassii bromidi.....ʒj.

Aquæ menthæ piperitæ.....ʒij.—M.

Sig.: A teaspoonful every three hours for a day or two.

CORYZA. (See Catarrh.)**CROUP.** (Spasmodic.)

Called also spasmodic laryngitis or false croup in contradistinction to true croup, is a common disease. It occurs ordinarily between the ages of two and five years.

Causes.—In some families there is an hereditary tendency. The exciting cause in most cases is exposure to cold. False croup is common in the commencement of measles.

Symptoms.—Spasmodic croup is usually preceded for a day or two by a slight cough and mild nasal catarrh. It commences in most patients at night after the first sleep between ten and twelve o'clock. The child awakens with a loud, barking cough. There is great dyspnoea due to swelling and tension of the vocal cords. The face is flushed and expressive of suffering. The child cries. The skin is hot, the pulse accelerated, the voice hoarse. From a half to three hours these symptoms abate. Sometimes the attack is repeated once or more during subsequent nights.

Differential Diagnosis.—Spasmodic croup may be mistaken for true croup. The friends usually make this mistake before the physician arrives. True croup begins gradually. The cough becomes more harsh and the respirations more difficult by degrees, by day as well as by night. On the other hand, false croup commences abruptly at night with severe symptoms from the first. The cough in false croup possesses a loud, sonorous character, while in true croup it is harsh and less full. False croup must not be confounded with laryngismus stridulous or internal convulsions. The latter is not inflammatory, but purely spasmodic, suddenly commencing and abating (Smith).

Treatment.—To relieve the spasmodic action of the laryngeal muscles, a warm bath should be employed at once, and the patient kept in ten or fifteen minutes. In mild cases, a warm foot-bath may be sufficient. An emetic should be given at the same time with the bath. To children under three years, syrup of ipecac should be given in doses of one teaspoonful, repeated in twenty minutes, till vomiting occurs. Children over the age of

three years are best treated by the compound syrup of squills in teaspoonful doses till vomiting is produced. Rochelle salts should be given after the nausea from the emetic has subsided. Inhalation of the vapor of hot water and a sinapism over the neck and upper part of the sternum are useful aids. Spraying the throat with a solution of two drachms of sodium bicarbonate to a pint of lime-water is effective. Five or six drops of syrup of ipecac, or of compound syrup of squills should be given every third hour the next day. The atmosphere in the room of the patient should be loaded with moisture. Trousseau applied a sponge soaked in water as hot as can be borne, to the larynx, repeated in ten minutes. The hoarseness, dyspnoea, and cough diminish with this treatment.

PRESCRIPTIONS FOR SPASMODIC, OR CATARRHAL CROUP.

R Potassii bromidi.....
 Chloral hydratisaa.....gr. xx.
 Syrupi acaciæ.....ʒj.—M.

Sig.: A teaspoonful or less, according to age. —Ellis.

R Tincturæ aconiti radicis.....ʒss.

Sig.: One drop in a teaspoonful of water every hour till urgent symptoms abate; then every two or three hours. —Ringer.

R Pulveris aluminis... ..ʒij.
 Syrupi ipecac.....ʒj.—M.

Sig.: One teaspoonful every twenty minutes until vomiting is produced. A hot mustard foot-bath should be given at the same time. —J. L. Smith.

R Syrupi ipecacuanhæ.....ʒij.

Sig.: A teaspoonful every fifteen minutes until vomiting is produced. Then five or ten drops every three hours the next day. —Meigs and Pepper.

CROUP. (Membranous).

Called also true croup, or pseudo-membranous laryngitis, is a common and fatal disease, and occurs most frequently between the ages of two and twelve years. Some authorities regard membranous croup as only a laryngeal diphtheria.

Causes.—According to J. L. Smith, the causes of croup are,

diphtheria, "taking cold," measles, pertussis, scarlatina, typhoid fever, and irritating inhalation.

Symptoms.—Membranous croup commonly begins gradually and insidiously, revealed at first to the physician by hoarseness or huskiness of the voice, and a hoarse or harsh cough. According to Bartholow, it is a purely local affection, and occupies the larynx exclusively. The exudation is *on* and not *in* the mucous membrane, and blood-poisoning never results. Occasionally masses of pseudo-membrane are expectorated. The dyspnœa gradually increases. Whitish or grayish patches of false membrane may be seen on the fauces.

Prognosis.—It is one of the most fatal diseases of childhood (Loomis).

Treatment.—The agents which have been most employed for the purpose of dissolving the false membrane are lime-water, lactic acid, pepsin and trypsin. Smith uses the following formulæ in the steam atomizer with good results :

R Sodii bicarbonatis.....3ij.
 Aquæ calcisO. j.—M.

Liquid trypsin may be employed with lime-water.

R Extracti pancreatis (Fairchild's)....3j.
 Sodii bicarbonatis.....3iij.—M.

Add one teaspoonful of this to six teaspoonsful of water, and apply every half hour with a camel's hair pencil.

R Liquor potassæ.....3j.
 Aquæ calcis.....O. j.—M.

This may be inhaled from the steam-atomizer.

Calomel has been used with good results in doses of from five to ten grains in the commencement of the disease.

PRESCRIPTIONS FOR MEMBRANOUS CROUP.

R Hydrargyri sulphatis flav.....gr. ij-v.
 In pulv. no. 1.

Sig.: Use as an emetic. —Fordyce Baker.

R Acidi lactici.....3iiss.
 Aquæ destillatæ.....3x.—M.

Sig.: Apply with atomizer or brush frequently. (To dissolve the membranes.) —Mackenzie.

CYSTITIS.

Is an inflammation of the mucous membrane of the urinary bladder. It is acute or chronic.

Causes.—Foreign bodies, especially calculi, in the bladder, blows, protracted retention of urine, scarlet, typhus, and typhoid fevers, pyæmia, septicæmia, small-pox, diphtheria, myelitis, urethritis, pyelitis, and pelvic cellulitis may cause cystitis. Urethral stricture, paralysis of the bladder, gout and some forms of kidney disease are accompanied by chronic cystitis (Loomis).

Symptoms.—Acute cystitis is always accompanied by frequent micturition, only a few drops being voided at each attempt. After its passage the patient strains to pass more. There are dull aching pains over the pubis; sometimes the pains in the vesical region are agonizing, and there is a constant burning sensation along the urethra. The urine is cloudy, deposits mucus on standing, is alkaline, and sometimes fetid. Acute cystitis lasts about one week. Chronic cystitis is often only indicated by a frequent desire to pass urine. Usually there is a constant, dull, aching pain, or a sense of weakness over the bladder. Only a small quantity of urine is passed with each act (Loomis).

Treatment.—In acute cystitis, the patient must have perfect rest. Warm hip-baths give relief. Rectal injections of opium and belladonna are always indicated, with large poultices and very hot fomentations over the bladder. The bowels should be kept free. For the pain, chlorodyne is the best. Twenty minims of liquor potassæ in mucilage may be given three times in twenty-four hours. In chronic cystitis, the catheter is to be regularly and persistently used. The bladder should be washed out with weak solutions of borax. Very weak solutions of salicylic acid, carbolic acid, permanganate of potash, and chloride of sodium are also recommended. The daily use of mineral water, like Vichy, is beneficial. Drachm doses after each meal of the "Lafayette mixture" are very serviceable.

PRESCRIPTIONS FOR CYSTITIS.

R Bals. copab.....
 Spts. etheris nitros—aa3ss.
 Liquor potassæ.....5j.
 Mucilag. acaciæ..ad 3iv.—M.
 —“Lafayette Mixture.”

All stimulating drinks are forbidden (Loomis).

R Atropinæ sulphatis.....gr. j.
 Acidi acetici.....gtt. xx.
 Alcoholis.....
 Aquæ—aa3ss.—M.

Sig.: Four drops in a wineglassful of water before each meal.
 (In acute cystitis.) —Goodell.

R Extracti tritici fluidi.....
 Syrupi amygdalæ—aa3ij.—M.

Sig.: A dessertspoonful in water five or six times daily. (In
 chronic cystitis.) —Thompson.

R Potassii citratis.....3ss.
 Spiritus chloroformi.....3iiss.
 Tincturæ digitalis.....2℥Lxxx.
 Infusi buchu.....3vij.—M.

Sig.: Two tablespoonsful three or four times daily.—Fothergill.

CANCERUM ORIS.

Called also gangrene of the mouth, noma, aqueous cancer of infants, is a disease of childhood occurring between two and six years. The point of attack, which is most frequently the inside of the cheek, becomes inflamed, thickened and indurated, then a purple hue appears, followed by sloughing and gangrene (J. L. Smith).

Causes.—This is a very rare disease. It occurs in debilitated and cachectic children, and in those recovering from acute diseases, such as scarlet fever (Loomis).

Symptoms.—It commences with pain in the mouth, an abnormal quantity of saliva, and offensive breath. Finally an ulcer appears, with a dark, ashy-brown colored slough. It may perforate the cheek.

Prognosis.—Nineteen out of twenty die (Loomis).

Treatment.—Nitrate of silver, and even strong nitric acid, should be applied to the slough, and the mouth washed with solutions of carbolic acid and chlorate of potash. The best internal remedies are quinine, hydrochloric acid and stimulants (Loomis).

CARDIALGIA.

Signifies pain at the cardiac orifice of the stomach of a burning character and shooting into the chest, and up the œsophagus into the throat. It is vulgarly called heartburn. Everyone has occasionally experienced this symptom. It characterizes certain cases of indigestion, and it is evidently dependent on the presence of an acid in the stomach, as it is quickly and completely relieved for a time by an alkaline remedy, such as lime-water, liquor potassæ, bicarbonate of soda and magnesia.

CATALEPSY.

Is a functional disease of the nervous system, closely allied to hysteria and epilepsy. It is characterized by loss of consciousness, sensation and volition, accompanied by a peculiar muscular rigidity in which the limbs remain for some time in whatever position they are placed (Loomis).

Causes.—Catalepsy may occur at any age, but it is more common in females about the age of puberty. It may precede melancholia and epilepsy. Traumatism, strong emotions, fright, shock, and religious excitement may induce an attack (Loomis).

Symptoms.—Catalepsy occurs in paroxysms. Consciousness is suddenly lost, and the limbs are as rigid as if petrified. The face has a death-like appearance. The skin is cold and temperature is sub-normal. The attack may last a few minutes, several hours, or for days.

Prognosis.—As a rule, favorable (Loomis).

Treatment.—An emetic will generally cut short an attack. The faradic current may be employed to arouse the patient. Morphine may stop the paroxysm, given hypodermically. Asa-fetida, valerian, camphor and turpentine may be given.

CEPHALALGIA. (See Headache).**CEREBRO-SPINAL MENINGITIS.**

Called also spotted, petechial and congestive fever, is an inflammatory affection of the arachnoid and pia mater of both the brain and spinal cord.

Causes.—Epidemics have occurred at all seasons, but more often in cold weather. It is most likely to attack those between ten and eighteen years of age. Cold, damp and overcrowded houses predispose to it. The real cause is not known (Loomis).

Symptoms.—In some cases the patient is suddenly seized with a chill, loss of consciousness, becomes comatose, and dies in a few hours. Headache in most cases is prominent, and even in a condition of coma, causes the patient to groan. Pain in the back and upper part of the spine is a characteristic symptom of the disease. Attempts to flex the head on the chest increase the pain, and pressure against the back of the neck often induces excruciating agony. Soon the muscles at the back of the neck become stiff, and the head extended (opisthotonos). Attempts to swallow are painful. The temperature, as a rule, is low. The pulse is from 120 to 150. The pupils are often unequal in size. The face is pale and anxious, and has a dusky hue. Delirium comes on. The pains are shooting and lancinating in character. The eruption is usually limited to the face, neck and lips; it is herpetic in character. There is photophobia.

Prognosis.—Unfavorable. From 30 to 80 per cent. die.

Treatment.—The patient should be put to bed in a dark, cool, well-ventilated room, away from noise. The diet should be milk. Opium, bromide of potassium, quinine, and ergot in proper doses are useful. Cold applications to the head, mustard foot-baths, and mustard to back of neck are serviceable.

PRESCRIPTIONS FOR CEREBRO-SPINAL MENINGITIS.

R Morphiæ sulphatis gr. ss.
 Acidi sulphurici aromat. ʒj.
 Elixir cinchonæ ad ʒvj —M.

Sig.: A teaspoonful every two hours for a child twelve years old.
 —Meigs and Pepper.

R Acidi hydrocyanici diluti.....℥℥. xx-xl.
 Sodii bicarbonatis.....ʒi-iss.
 Syrupi simplicis.....
 Aquæ.....aa.....q. s., ad.....ʒiiss.—M.

Sig.: A teaspoonful every three or four hours for severe vomiting.
 —Delafield.

R Hydrargyri chloridi mitis.....
 Pulveris jalapæ.....
 Sacchari albi.....aa.....ʒj.—M.
 In pulv. no. x. div.

Sig.: A powder every hour until free purgation occurs.

—Kobert.

CHICKEN-POX. (See Varicella.)

CHIN-COUGH. (See Whooping-cough.)

CIRCUMCISION.

Was instituted as a religious rite by Abraham, about 2,000 years before Christ.

Several Eastern nations still practice it as a hygienic measure. The chosen people preserve the custom as a religious ceremony, performing it on the eighth day.

Operation.—Mark off with an aniline pencil the limits of the integument which it is proposed to remove. This line should follow the curve of the corona glandis at a short distance in front of it. Now seize the redundant prepuce with the forceps so that the aniline line shall lie just in front of the closed blades, taking care not to include the glans in the grasp of the forceps. With scissors cut off the outer portion. After the forceps has been removed, the inner layer of the prepuce is to be slit down to the corona upon the dorsum of the glans and the entire mucous membrane to be trimmed away on either side up to the frenum, leaving only enough tissue to serve to hold the sutures. Primary union seems always to occur. In the infant no suture is required. The parts coapt naturally, and healing is accomplished usually in about forty-eight hours. In the adult, horse hair has proved the best material with which to suture the cut edges. The first suture should be applied at the raphe. The ends of the suture are to be cut off about an inch long, to prevent the wound

from rolling in during the swelling of the first two days. It heals in from four to eight days. An opiate for sleep and a laxative are the only medicines usually required (Keyes).

COMA.

Is complete loss of consciousness, and there is the appearance of the profoundest sleep. The face wears a confused look; the pupils are sluggish, often dilated; the mouth is open, the tongue dry. Sensation may be blunted, but is not destroyed; nor is motion, for the patient moves when his skin is pinched or tickled. Coma always betokens a serious disturbance of the functions of the brain (DaCosta).

Causes.—The cranial causes are: Hyperæmia, anæmia, œdema, compression, tumors, thrombosis, embolism, apoplexy, abscess, softenings, shock, and concussion. The most thorough coma is seen in apoplexy; it comes on quickly, and is attended with a noisy respiration and a slow pulse. The extra cranial causes are: Hysteria, epilepsy, uræmia, cholæmia, poisons of drugs, narcotics and anæsthetics, anti-spasmodics, alcohol, poisons of fevers, malaria, etc. (Loomis).

Treatment.—Discover and treat the cause.

CORNS.

Are small callous thickenings of the skin, especially on the toes, the result of occasional pressure. Dr. Sayre writes that a corn is infinitely more painful than a cancer, and is capable of inflicting torment and agony sufficient to destroy the sweetest disposition, and upset the best regulated families. There are two varieties of corns, the hard and the soft. The soft corn is found between the toes, is exceedingly tender, and is liable to become inflamed. The hard corn has a hard, white core in the centre. The irritation produced by pressure upon these formations may give rise to reflex muscular contractions which will draw the toes up.

Treatment.—Shoes must be worn which will permit expansion of the foot. Pare the corn as much as possible without drawing blood. Then rub the surface with solid stick of nitrate

of silver, and in a few days another layer will come off. Now surround the corn with narrow strips of adhesive plaster to protect it from pressure. To the soft corn apply concentrated nitric acid or the solid stick of nitrate of silver, and place a pledget of cotton between the toes. In a few days the hardened mass will come away. Glacial acetic acid, and carbolic acid, are good applications. According to Bartholow, no application is so certain, prompt and effective, for the cure of corns, as liquor potassæ. It should be applied by means of a glass rod to the summit of the corn and the tissue softened by it scraped off. By successive applications the callosity is removed without pain or discomfort.

COLD FEET.

Many persons, especially women, are troubled with cold feet, particularly at night; so cold, indeed, as to effectually prevent sleep for hours. This condition, which may rank as a distinct ailment, is best treated by immersing the feet nightly for a few minutes in cold water, rubbing them whilst in the foot-bath diligently until they become warm and glowing, and then, after thorough drying, clothing them in thick, over-large woolen or "fleecy hosiery" socks. The feet may be sponged first with water as hot as can be borne, and then for a few seconds with a sponge wrung out of cold water (Ringer). Dr. Chapman asserts that the ice-bag, applied along the lower dorsal and lumbar vertebrae, by increasing the flow of blood to the legs, proves very comfortable to persons harassed with cold feet; and he has often seen the feet become comfortably warm a few minutes after the application of ice. According to Dr. Anstie, strychnia promotes capillary circulation, and he recommends it in troublesome coldness of the feet and hands.

COUGH.

Is a sudden and violent expiration, having usually for its object the expulsion of some annoying substance from the air passages. But it may be purely nervous. A nervous cough sometimes occurs in children and in chlorotic girls. The cough is usually in paroxysms, has a peculiar barking tone and resem-

bles whooping cough. It is short, painless, and without expectoration.

Causes.—In children, it may result from diseases of the brain, from dentition, from worms, and spinal irritation. In others, anæmia, hysteria and nervous excitement may be the cause. It may be induced by involuntary imitation. A school for girls was suspended on account of the large number of cases (Flint and Smith).

Treatment.—Tonic remedies, a nutritious diet, out-door life, quinia and small doses of strychnia are useful. No remedy is so useful in ordinary cases as iron. Dr. Cameron used the following prescription :

R Ferri subsulphatis..... $\overline{3}$ ss.
 Acidi nitrici..... $\overline{3}$ ss.
 Aquæ destillatæ..... $\overline{3}$ ss.—M.
 Sig.: Three drops four times daily in sweetened water.

R Tincturæ belladonnæ.....gtt. xxxij.
 Potassii bromidi.....
 Ammonii bromidi—aa..... $\overline{3}$ j.
 Syrupi simplicis..... $\overline{3}$ ij.—M.
 Sig.: One teaspoonful three times daily. (For a child three years.) —J. L. Smith.

There are several kinds of cough ; according to the amount of expectoration, a cough is dry or moist ; according to its origin, it is laryngeal, tracheal, bronchial, sympathetic, etc.

A dry cough is indicative of irritation either in the larynx, trachea, bronchi, or in the lung substance. An elongated uvula, pleurisy, and the earlier stages of phthisis may give rise to a dry cough. But the irritation may not be situated at all in the respiratory system. Affections of the liver, stomach, intestine, uterus or brain will occasion an obstinate dry cough. Cough is frequently preceded by a sensation of tickling in the larynx. Lying down often increases its intensity.

PRESCRIPTIONS FOR COUGH.

R Misturæ asafoetida..... $\overline{3}$ iv.
 Ammonii muriatis $\overline{3}$ j.—M.
 Sig.: A tablespoonful as necessary. (For sympathetic and cough maintained by habit.) —Bartholow.

R Chloral hydratis

Camphoræ—aa..... ʒss.—M.

Triturate in a mortar till a clear fluid is formed.

Sig.: Paint with a camel's hair brush over the larynx to allay spasmodic cough. —Bartholow.

R Extracti gelsemii fluidi..... ʒiij.

Sig.: Three to five drops in water every two hours until drooping of the eyelids and dilation of the pupil takes place. (For nervous, spasmodic, reflex and irritative cough.) —Bartholow.

R Acidi hydrocyanici diluti..... ʒj.

Tincturæ sanguinariæ..... ʒiv.

Syrupi senegæ..... ʒss.

Syrupi tolutan..... ʒij.

Aquæ lauro-cerasi ʒvij —M.

Sig.: One or two teaspoonsful, according to age, every three or four hours. (For irritable, nervous, and cough by habit.) —Bartholow.

Syrup of wild cherry and syrup of lactucarium are excellent vehicles for cough mixtures.

R Aluminis ʒj.

Aquæ..... ʒvj.—M.

Sig.: Use in the form of a spray for chronic coughs and hoarseness. —Ringer.

R Chloroformi ʒj.

Morphia sulph..... gr. iss.

Glycerinæ ʒij.—M.

Sig.: A teaspoonful when cough is troublesome.

R Olei morrhue..... O. j.

Sig.: A teaspoonful three times daily, for a while, then increase to tablespoonful. (For chronic cough.)

A drop of pure beech-wood creosote may be given with the cod-liver oil.

A teaspoonful of glycerine added to water or a little lemon-juice, is often useful in coughs, even the cough of phthisis.

This dose, taken at night, often lessens morning cough (Ringer).

Glycerine of tannin is a very useful application to the throat when chronically inflamed and so productive of cough, which is often the case in children.

The tincture of iodine may be used as an inhalation in the chronic forms of phthisis to allay the troublesome cough; and as an inhalation for children with hoarse, hollow cough, accompanied by hoarseness and wheezing at the chest. Use as follows: Pour twenty to thirty drops of the tincture of iodine in a half or a pint of boiling water; then direct the patient to put his face over the mouth of the vessel and breathe the iodized steam for five or ten minutes night and morning with the head covered with a towel to prevent escape of the steam (Ringer).

According to Rummo a four per cent. solution of iodoform in spirits of turpentine, used as an inhalation or spray, will diminish the cough of phthisis and chronic bronchial catarrh.

According to Ringer, in the obstinate winter cough with difficult breathing and wheezing, the wine of ipecac applied as a spray to the fauces once or twice daily is very efficacious. The wine may be used pure or diluted.

COMEDONES.—(See Acne.)

CYSTS.

Are developed in many ways: some are possibly new growths, some are formed in an accidental way by simple effusion of fluid into connective tissue, and others are produced by a dilatation of occluded ducts, or natural gland orifices, the cysts enlarging by the secretion of the ducts or gland contents. Of these the mucous cysts of the mouth and vagina, the sebaceous cysts of the skin, and the milk cysts of the breasts are the best examples (Bryant).

Varieties.—*Serous cysts, mucous cysts, sebaceous cysts, oil cysts and dermoid cysts.*

Serous Cysts are most commonly found connected with the kidney, ovary, thyroid or breast. They are sometimes seen in the neck. They contain a limpid, watery fluid, and are painless.

Treatment.—It is dangerous to tap or extirpate a cervical cyst. Let it alone.

Mucous Cysts are found wherever mucous glands exist, and are caused by some obstruction to the escape of the gland contents. They are found on the lips, within the cheeks, on the

tongue and gums, and beneath the tongue when they are called *ranula*. They contain a thick ropy fluid.

Treatment.—They may be excised, or their walls cut into.

Sebaceous Cysts appear as congenital and acquired tumors. Some are caused by obstruction to the orifice of the sebaceous glands. The congenital sebaceous cyst is deeply placed, and is more common about the orbit and brow. They contain a whitish or yellowish liquid secretion and sometimes hair. The acquired sebaceous cyst may be found on any part of the body, but it is more common on the head and face. When on the scalp, they are known as *wens*.

Treatment.—The only correct treatment is their removal.

Dermoid Cysts are frequently met with situated deeply beneath the skin and muscle. They are congenital, filled with sebaceous matter, and often contain hair.

Treatment.—They should be dissected out.

Oil Cysts are met with but rarely, and are probably always dermoid.

CALCIFICATION.

Called, also, calcareous degeneration, or cretification, is an infiltration of the tissues with the phosphate and carbonate of lime. Calcified tissues are recognized by their hard, sometimes stony consistence. Tissues which have undergone fatty degeneration are especially prone to calcification. In the vast majority of cases of calcification, the lime is deposited in tissue previously diseased. Of great practical importance is the calcification of the cardiac valves in chronic endocarditis, and of the internal and middle coats of the arteries in old age (Flint). Removing tumors from the pelvic or abdominal cavity, when the tissues and arteries are calcified, gives rise to troublesome or even fatal hemorrhage.

CHLOASMA.

Is a diffuse form of excessive pigmentation. It is most frequently met with in women during pregnancy, and also in unmarried females between the ages of thirty and the cessation of the menses, as a result of disordered menstruation, and of dis-

eases of the sexual organs. It has the appearance of a dirty yellow or brown discoloration, generally implicating the face, and often extending across the forehead from temple to temple, and from near the eye-brows to near the roots of the hair.

Treatment.—Careful attention must be paid to the general health and sexual organs. The local treatment is most important. Some local applications, such as mustard, cantharides, and croton oil, are apt to be succeeded by new epidermis which is more deeply pigmented than that which it has replaced, and are, therefore, to be avoided; while others, such as perchloride of mercury solutions, have exactly the opposite tendency. We may use a perchloride of mercury solution of the strength of five grains in an ounce of alcohol in the following manner: Place the patient in bed and apply compresses dipped in the above solution. Moisten the compresses from time to time with the fluid without displacing them. The compresses are removed in four hours, when the skin is found to be reddened or blistered. If blistered, let out the fluid and dust the surface with starch powder.

CRAMP.

In writers' cramp, the flexor muscles of the thumb and fingers become rigidly contracted. Pianists, violinists, printers, tailors, etc., are sometimes similarly affected. In the treatment of writers' cramp and allied affections, discontinuance of acts which occasion the spasm is essential. Galvanism is most useful. It seems to be a central, not a peripheral affection. Some persons are liable to suffer much from cramp of the muscles of the leg or feet, occurring especially at night. Bardsley's treatment consists in sleeping on an inclined plane, the bed being twelve inches higher at the head than at the foot. Galvanism is very effective in these cases (Flint).

Cramp may occur in any muscle. Occasionally the stomach is the seat of cramps, and causes great pain, and ejection of food. Galvanism seems to be more effective than other forms of treatment.

CIRRHOSIS. (Of Liver.)

Called also interstitial hepatitis, is an inflammation of the connective tissue of the liver. It has been named sclerosis of the liver, "Gin-drinkers" liver, "hob-nailed" liver, etc.

Causes.—The chief cause of cirrhosis is the intemperate use of alcohol. When it is taken in a concentrated form without food, it acts as a direct irritant to the hepatic circulation. If this irritation is long continued cirrhosis is the result. Those who take alcohol before breakfast as well as through the day are almost certain to develop cirrhosis of the liver. Those who partake freely and daily of highly seasoned food, even though they may not use alcohol, are also liable to develop cirrhosis. Syphilis, gout and rheumatism cause it (Loomis).

Symptoms.—Dull pain and tenderness in the hepatic region, dyspnoea, apathy, headache, nausea and furred tongue, and loss of appetite, especially for meats, are the chief symptoms. There may be slight jaundice. Tympanites as well as intestinal catarrh usually precedes ascites. Before the ascites, the abdominal veins, especially of the right side, are sometimes enormously distended. Ascites is sometimes absent. The stools in cirrhosis are characteristic. They are clay-colored in the centre; surrounding this there is a dull pinkish ring, and around this a slate grey ring tinged with mucus. The urine is scanty and very dark colored (Loomis).

Prognosis.—Unfavorable.

Treatment.—All spirituous liquors must be abstained from. Nitro-muriatic acid and cod-liver oil are useful. Dilute nitric acid and columbo assist stomach digestion. Creosote and sulphite of sodium are of service, when acid fermentation is a distressing symptom. For the ascites and general dropsy, squills and digitalis are effective; but when they fail, tapping must be resorted to (Loomis).

DEBILITY.

Dr. Anstie highly extolled alcoholic stimulants in the debility of old age, especially in the condition of sleeplessness, attended often with slow and ineffectual digestion and a tendency

to stomach cramps. He employs a generous and potent wine containing much ether. According to Ringer, the good old-fashioned remedy, rum or brandy and milk taken before breakfast, is useful in phthisis and in exhausting diseases, and is a good prop to town-living women who suffer from morning exhaustion. Arsenic is useful for the swollen feet of old or weakly persons; or for old people with a weakly acting heart and feeble circulation, who often suffer from breathlessness on exertion. Cod-liver oil is useful in chronic degenerative diseases of old age. In nervous and general debility, cod-liver oil and the hypophosphites are highly useful. Quinia is of great benefit to pale and badly fed town dwellers. Sea bathing is recommended in chronic illness with debility.

PRESCRIPTIONS FOR GENERAL AND SENILE DEBILITY.

- R Tincturæ ferri chloridi.....
 Syrupi simplicis—aa $\bar{3}j$.
 Aquæ cinnamomi..... $\bar{3}ij$.—M.
 Sig.: A teaspoonful three times daily. —Charity Hospital.
- R Spiritus chloroformi..... $\bar{3}v$.
 Acidi hydrochlorici dil..... $\bar{3}iiss$.
 Infusi cinchonæ..... $\bar{3}xv$.—M.
 Sig.: Two tablespoonsful three times daily. —Fothergill.
- R Quiniæ sulphatis.....gr. xxx.
 Acidi sulphurici diluti.....q. s., ad. ft. sol.
 Aquæ $\bar{3}ij$.
 Tincturæ ferri chloridi..... $\bar{3}ss$.
 Spiritus chloroformi..... $\bar{3}vj$.
 Glycerinæ $\bar{3}iv$.—M.
 Sig.: A teaspoonful three times daily. —Loomis.

DELIRIUM.

This is a wandering of the mind, the patient muttering incoherent words. It is more common in the young and nervous than in the old. The delirium may be quiet or active. It may be brought on by acute diseases, especially fevers.

DELIRIUM. (Tremens.)

Occurs most frequently in old toppers after a severe drinking bout, or it follows the sudden withdrawal of stimulants, or an attack may be induced by some strong moral emotion or excitement, or by an accident or injury (Loomis).

Symptoms.—The appetite is lost and even the drink is rejected. The trembling increases; the manner grows excited and irritable. Insomnia is an early symptom. Hallucinations and illusions come on. The delirium usually begins at the moment of falling asleep or in awaking. He then sees frightful objects—goblins, demons and monsters—but fully awake they vanish. This preliminary state is often called “the horrors.” As the case progresses the hallucinations become constant. The patient sees snakes on the wall and bed, and endeavors to escape from them. He may be noisy, furious, and dangerous. There may be illusions of smell and hearing. Delirium tremens usually lasts about two weeks, by which time recovery or death will have taken place (Bartholow).

Treatment.—Provide suitable aliment for the patient and try to procure sound sleep. Milk and lime-water may be given freely, to which it may be advisable to add whiskey or brandy. Egg-nog, beef-juice and other animal broths should be well fortified with red-pepper. For securing sleep, one-fourth of a grain of morphine and fifteen grains of chloral may be given, if the heart is not weak. Bromide of potassium in full doses may be given for “the horrors.” Pilocarpine, tincture of digitalis in drachm doses, tincture of cannabis indica, and chloroform internally may be used with advantage.

PRESCRIPTIONS FOR DELIRIUM.

R	Potassii bromidi	
	Sodii bromidi.....aa	gr. xv.
	Chloral hydratis	gr. x.
	Tincturæ zingiberis.	℥x.
	Tincturæ capsici	℥v.
	Spiritus ammonii aromat	ʒj.
	Aquæ.....q. s., ad.....	ʒij.—M.

Sig.: Dose, ʒij.

—Starr.

R Chloral hydratis.....3ss.

Syrupi aurantii corticis.....

Aquæ.....aa3ss.—M.

Sig.: To be taken in one dose, and repeated if necessary.

—Liebreich.

R Potassii bromidi.....3ss.

Syrupi simplicis.....3j.

Aquæ feniculi.....q. s., ad.....3ij.—M.

Sig.: Two teaspoonfuls every two hours

—Ringer.

R Potassii bromidi3j.

In pulv. no. vii. div.

Sig.: A powder dissolved in one-half tumblerful of water every four to six hours (In "the horrors.")

—Bartholow.

DIABETES INSIPIDUS.

Called, also, polyuria, hyperuresis, and polydipsia, is characterized by extreme thirst, and the secretion of a large quantity of colorless urine, of low specific gravity, free from sugar and albumen (Loomis).

Causes.—Diabetes insipidus may occur at any age and in either sex. Disturbance of the sympathetic ganglia causes dilatation of the capillary vessels of the kidney, and produces diabetes. Blows on the head, injuries to the medulla and spinal cord, and violent emotions have all apparently caused its development. Drinking large quantities of ice-water when overheated, and exposure to cold and wet, are among its supposed causes (Loomis). Bartholow gives syphiloma of the brain as the most usual cause.

Symptoms.—Its chief symptom is the passage of a large quantity of limpid urine; the quantity varies from thirty to sixty pints per day. Its specific gravity ranges from 1003 to 1008; it is remarkably clear, and faintly acid. It contains no sugar or other abnormal ingredients. There is intense thirst. The skin becomes harsh and dry; and the temperature subnormal. There may be salivation (Loomis).

Prognosis.—Recovery from diabetes insipidus is rare. It may last many years.

Treatment.—At all times the body should be warmly clothed, and the skin kept active. According to Bartholow, the iodides

and mercury have quickly cured cases of syphilitic origin. Jaborandi and ergotin have been successful. A course of iodide of potassium should be at first administered, and if the disease does not yield, galvanism should be tried.

PRESCRIPTIONS FOR DIABETES INSIPIDUS.

R Extracti ergotæ fluidi..... \bar{z} ij.

Sig.: A teaspoonful three times daily, increased to two teaspoonfuls. —DaCosta.

R Auri chloridi..... \bar{z} j.

Confect. rosæ.....gr. xx.—M.

Ft. massa et in pilulas no. xx. div.

Sig.: A pill after meals thrice daily. —Bartholow.

R Pulv. valerianæ rad..... \bar{z} ii-iv.

In chart. no. xii. div.

Sig.: A powder three times daily. —Demange.

DIABETES MELLITUS.

Called also glycosuria, is a chronic disease characterized by the constant presence of grape-sugar in the urine, by an increased urinary discharge, and by progressive wasting of the body. It has at various times been regarded as a disease of the kidney, alimentary canal, liver, and nervous system, but its exact pathogeny has never been determined (Loomis).

Causes.—Diabetes occurs at all ages, but is most frequent in middle life. It appears to be hereditary in some cases. Shock or concussion of the whole body, or of the brain and spinal cord, blows upon the hepatic and renal regions, mental shocks, anxiety and chagrin may cause it (Bartholow). Pregnancy, impaired digestion, and immoderate use of sugar, new wine, and alcohol have also been named as causes (Loomis). Excessive activity in the glycogenic function of the liver may so overload the blood with sugar as to cause it to appear in the urine (Loomis).

Symptoms.—Diabetes may be acute and result fatally within two or three weeks from the time the increased flow of urine is noticed. But it usually comes on insidiously; the patient notices for some time that he has been passing more urine than usual,

and has been unusually thirsty. While his appetite is good, yet he is losing flesh and strength; and there is an abnormal dryness of the mouth, throat and skin, with intolerable itching, followed by desquamation. There is loss of sexual desire. The tongue is red or coated; the gums are pale, retracted and bleed easily, and the teeth become carious. There are nausea and vomiting, with constipation. The temperature, pulse-rate and respirations are below the normal. In some cases, there will be little thirst or loss of appetite and no emaciation (Loomis).

The Urine.—Very rarely the amount of urine passed is but little increased; generally it rises to twenty or fifty pints in twenty-four hours. The urine is acid, of a light straw color, without sediment. The specific gravity varies from 1030 to 1070 with an average of 1040. In rare cases a low specific gravity of 1008 or 1010 is recorded (Loomis).

Prognosis.—The disease may last from a few weeks to ten or twelve years. Boils and carbuncles may complicate it (Loomis).

Treatment.—Dieting is of the first importance. All saccharine form of food, or any article that can be converted into sugar should be avoided. Hence, starchy foods, bread, arrow-root, tapioca, sago, such vegetables as potatoes, parsnips, turnips, carrots, beans and peas, are to be absolutely avoided. Salads, greens, acids, fruits, all kinds of flesh and fowl, eggs, cheese and butter, unsweetened tea and coffee, can be taken. Baths and moderate exercise should be taken. Extract of opium, morphia, and codeia in small doses are useful. Mineral waters are given. If there is anæmia, iron, cod-liver oil, strychnia, and quinine should be given. Surgical operations should on no account be undertaken on diabetic patients.

PRESCRIPTIONS FOR DIABETES MELLITUS.

R	Sodii salicylatis.....	3iv-vj.	
	Glycerinæ	3j.	
	Aquæ.....ad	3iij.—M.	
Sig..	Two teaspoonfuls three times daily.		—DaCosta.
R	Tincturæ opii.....	3j	
	Tincturæ ferri muriatis	3ix.—M.	
Sig.:	Twenty drops three times daily.		—Weller.

R Sodii salicylatis..... 3iij.
 Liquor potassii arsenitis..... 3j.
 Glycerinæ..... 3j.
 Aquæ cinnamomi..... ad..... 3iij.—M.
 Sig.: A dessertspoonful three times daily. —J. C. Wilson.

DIARRHŒA.

Is the frequent discharge of fluid or semi-fluid fæces. It may be acute or chronic.

Varieties.—*I. Irritative Diarrhœa* is that form induced by improper and unseasonable food, foul water, tainted meats, and drugs.

II. Symptomatic Diarrhœa is a part of the natural history of typhoid fever, intestinal ulcerations, all forms of cholera, and other diseases.

III. Mechanical Diarrhœa is that form in which the fæces are made fluid by a large amount of serum poured into the intestinal canal, by the action of Epsom and Rochelle salts.

IV. Nervous Diarrhœa may be caused by fright, grief, great anxiety, and severe pain.

V. Vicarious Diarrhœa occurs when the functions of the skin, kidneys or lungs are suppressed; the flux from the bowels affords relief. Chilling the body suddenly, or intense heat, brings on a vicarious flux.

VI. Fatty Diarrhœa is the result of faulty pancreatic digestion.

VII. Colliquative Diarrhœa is a copious flux occurring in wasting diseases toward their close, *e. g.*, phthisis, cancer and Bright's disease.

VIII. Chronic Diarrhœa is always associated with some form of chronic organic disease as chronic enteritis, intestinal ulcers, syphilis, malaria, scurvy and phthisis (Loomis).

Prognosis.—Depends on the cause. In fatty diarrhœa 50 per cent die.

Treatment.—Depends on the causes which produce it. If it depends on undigested food, a full dose of castor oil, or rhubarb and soda should be given. The diet should be restricted to milk and lime-water. Camphor, kino, bismuth, or dilute sulphuric

acid may be given. If there is griping, opium may be combined with the bismuth and camphor.

In the treatment of chronic diarrhœa, bismuth is the most reliable drug (Loomis).

PRESCRIPTIONS FOR DIARRHŒA.

R Spiritus lavandulæ comp.....3ij.
Tincturæ opii.....3ij.
Tincturæ rhei.....3ss.
Olei sassafras.....gtt. x.—M.

Sig.: A teaspoonful after each meal. —Loomis.

R Olei ricini.....3ij.
Pulveris acaciæ.....—
Pulveris sacchari.....aa.....3ij.
Tincturæ opii.....m. xxi.
Aquæ cinnamomi.....ad.....3iv.—M.

Sig.: A teaspoonful every three or four hours. (For children.)
—West.

R Magnesii sulphatis.....
Tincturæ rhei.....
Syrupi zingiberis.....aa.....3j.
Aquæ carui.....3ix.—M.

Sig.: A teaspoonful three times daily, to a child one year old.
—West.

R Tincturæ opii deodoratæ.....gtt. xvi.
Bismuthi subnitratæ.....3ij.
Syrupi simplicis.....3ss.
Misturæ cretæ.....3iss.—M.

Sig.: Shake well and give teaspoonful every three hours to a child one year old.
—J. L. Smith.

R Pulveris ipecac.....gr. ss.
Pulveris rhei.....gr. ij.
Sodii bicarbonatis... gr. xij.—M.

In pulv. no. xii. div.

Sig.: One powder every four hours to an infant one year old.
(In indigestion with acidity.) —J. L. Smith.

R Cretæ præp.....3ij.
Tincturæ catechu.....3ss.
Tincturæ opii.....℥i. lxxx.
Aquæ cinnamomi.....ad.....3viiij.—M.

Sig.: Two tablespoonfuls after each motion. —Fothergill.

DIPHTHERIA.

Is one of the most dreaded, one of the most fatal, and, unfortunately, one of the most common maladies of childhood. It is an acute, specific, contagious disease, beginning by an infection of the throat, and characterized by a local exudation, glandular enlargements, and systemic poisoning, and having for its sequelæ various paralyses (Barthelow).

Causes.—Diphtheria is a contagious disease, propagated by a specific poison, the form of which is not known. It may prevail as an epidemic, or occur sporadically. Filth, bad sewerage and drainage, overcrowding, and a general bad hygienic condition favor the development and spread of diphtheria. It is first a local, then a constitutional disease. The stage of incubation usually varies from one to eight days. No age is exempt, but from the second to the fifth year is the period of greatest susceptibility. Previous attacks afford no immunity against subsequent ones (Loomis).

Symptoms.—Are both local and constitutional. The local symptoms begin with a sensation of dryness, prickling and pain in the throat. There is hyperæmia of the fauces, and on the palate or tonsils, minute grayish-white patches appear. The false membrane is sometimes dark-red or even black. There may be swelling of the glands of the neck. The Eustachian tubes, œsophagus, posterior nares, larynx, vagina, and rectum may be involved. The constitutional symptoms are chill, fever, pain in the head and back, nausea, vomiting, and even convulsions. The temperature may be 103° or 104° F., the pulse 120 to 130. The patient's condition grows worse each day, until about the end of one week, when the membrane is thrown off. The loss of tendon reflex often occurs as early as the first, second or third day. It is a symptom of diagnostic value. Dr. McDonnell made the following statement: "Knee-jerk is absent from the very first day of the illness, in many cases of diphtheria."

Symptoms which indicate danger: 1. Diarrhœa may cause exhaustion. 2. Nausea and vomiting coming on late in the disease. 3. Albuminuria, and coma may occur as a result of the

nephritis. 4. An irregular and intermittent pulse throughout the entire course of the disease. 5. If the temperature falls to the normal, or below, and the exudation shows no sign of exfoliating. 6. Convulsions occurring late in the disease.

Sequelæ.—After the exudation disappears and convalescence is apparently established, sequelæ may develop, which may continue for months, and even years. The commonest is paralysis of some of the voluntary muscles; the muscles most frequently affected are those of the soft palate and pharynx. There is difficulty in swallowing and inability to articulate clearly. As the pharyngeal paralysis is disappearing—or from two to ten days after—the muscles of the lower or upper extremity may be involved. Before the occurrence of the paralysis there will be a sensation of coldness, pricking, crawling and numbness in the part about to be affected. There may be paralysis of any muscle. Paralysis of the heart may occur. Diphtheritic paralysis is always entirely recovered from. These paralyzes may follow the mildest as well as the more severe cases. In mild cases its duration is two or three weeks, while in others it has continued one or two years. Other sequels are nephritis and endocarditis (Loomis).

Differential Diagnosis.—The diagnosis of diphtheria rests on the presence of a membranous exudation. Ordinary sore throat or catarrhal pharyngitis is sometimes confounded with diphtheria. Membranous croup is a local affection, while diphtheria is a constitutional disease. Croup is not contagious or inoculable, while diphtheria is markedly so. In croup the exudation is on the surface of the mucous membrane; in diphtheria it is in its substance as well as on its surface. The submaxillary glands may be, and often are, enlarged in diphtheria, but never in croup. An erythematous eruption sometimes makes its appearance on the upper part of the chest and back in diphtheria (Loomis).

Prognosis.—Death rate is from twenty to fifty per cent. Duration varies from three to fourteen days. Cases that are apparently doing well sometimes terminate very unexpectedly and suddenly by paralysis of the heart. Complications make the prognosis more unfavorable. Death may occur from diphtheritic blood poisoning.

Treatment.—The patient should be kept in bed, and the room well ventilated, and have a temperature of 70 to 75 degrees. The patient should be kept scrupulously clean. Hot poultices should be applied externally to the throat; steam inhalation should be constant from the onset of the disease, until the exudation has disappeared; iron and brandy should be given freely; and the diet should be fluid, milk preferably (Loomis). According to Bartholow, a solution of lactic acid—strong enough to taste sour—frequently applied by means of a mop, gives excellent results. He also recommends highly the inhalation of the vapor, as it arises from the slacking of lime. The false membrane may be dissolved by very frequent inhalations of atomized lime-water and lactic acid. Bartholow gives the following to prevent systemic infection:

R Liquor iodi comp.....3ij.
Acidi carbolic.....3j.—M.

Sig.: One-fourth of a drop to two drops in water every four hours. Also, moderate doses of whiskey or brandy for the same purpose.

He also recommends iron, quinine, strychnine, galvanism and faradism for the paralytic affections of diphtheria. As a solvent for the false membrane, Dr. J. L. Smith recommends the following:

R Olei eucalypti.....3ij.
Sodii benzoat.....5j.
Sodii bicarbonatis.....5ij.
Glycerinæ.....3ij.
Aquæ calcis.....O. j.—M.

Sig.: To be used with the hand atomizer from three to five minutes every half hour, or with the steam atomizer almost constantly.

PRESCRIPTIONS FOR DIPHTHERIA.

R Papayotin5j.
Aquæ.5iv.
Glycerinæ.5viij.—M.

Sig.: Apply locally to membrane. —Jacobi.

R Trypsingr. xxx.
Sodii bicarbonatis.....gr. x.
Aquæ destillatæ.....3j.—M.

Sig.: Apply locally to membrane. —Fernald.

R Acidi carbolici.gtt. x.
 Liq. ferri subsulph. ʒiij.
 Glycerina. ʒj.—M.

Sig.: To be applied every three to six hours with a camel's hair brush. —J. Lewis Smith.

R Tincturæ ferri chloridi.ʒi-ij
 Potassii chlorat. ʒj.
 Acidi muriatici dil.gtt. x.
 Syrupi simplicis ʒiv —M

Sig.: A teaspoonful every hour or two. —J. Lewis Smith.

DIPSOMANIA.

Is a term commonly applied to an uncontrollable desire for alcoholic drinks. In cases of dyspepsia there may be a morbid craving for alcohol. The habitual drunkard feels a desire for continued indulgence, and lacks moral strength enough to govern an acquired appetite which represents a morbid condition. Dipsomania is to be treated as a disease of body and mind. The treatment consists in withdrawing the patient from the use of alcohol in any form, and in the employment of medicinal and hygienic measures. This morbid craving for alcohol is the sad inheritance from drunken parents (Flint). According to Ringer, ten-minim doses of tincture of capsicum obviate the morning vomiting, remove the sinking at the pit of the stomach, the intense craving for stimulants, and promote appetite and digestion in dipsomaniacs.

PRESCRIPTIONS FOR DIPSOMANIA.

R Tincturæ capsici.ʒ℥x.
 Potassii bromidi. gr. x.
 Spiritus ammoniæ. ʒj.—M.

Sig.: This to be taken at one dose, and repeated several times daily.

R Tincturæ gentianæ comp.
 Tincturæ columbæ comp. aa. ʒij.
 Tincturæ nucis vomicæ. ʒ℥ Lxxx.—M.

Sig.: A dessertspoonful before each meal. —Loomis.

DIRT-EATING.

Is a morbid habit which heretofore prevailed to a considerable extent among the plantation negroes of the Southern States. The kind of earth selected is loam or clay. According to Duncan, a very common disease among negroes on plantations is a state of anæmia, very often attributed to the pernicious habit of dirt-eating. Almost every large plantation has three or four such cases. With negroes, dirt-eating proceeds from the same propensity which leads white females to resort to chalk, magnesia, and slate pencils, etc., in order to relieve a disordered acrid condition of the stomach. Discover and treat the cause (Flint).

DROPSY.

Is an abnormal collection of watery fluid in the areolar tissue, or in the serous cavities of the body. Dropsy is not a disease, but a symptom. It is associated with various disorders. Dropsies may be external or internal. To internal dropsy belong hydrocephalus, or dropsy of the brain, hydrothorax, or dropsy of the chest, and ascites, or dropsy of the abdomen. External dropsies are illustrated by anasarca and œdema: the first is a universal accumulation of serous fluid in the areolar tissues; the second, a localized collection in the same tissue, differing in nothing but extent. Both exhibit painless swelling of the surface, devoid of redness; a skin often stretched and shining, pitting upon pressure, and both, if punctured, allow a watery fluid to run out. Œdema is most commonly perceived around the ankles. Anasarca is usually dependent upon disease of the kidneys, or of the heart. The swelling ordinarily begins at the feet and ankles in diseases of the heart, in the face in disease of the kidneys. Œdema may be due to the same causes, or the cause may be purely local, as when we see œdema happening if a bandage be applied too tightly, or if swollen glands press upon the main vein of a limb. We see œdema in venous inflammation, in milk-leg, or as a sequel of typhoid fever, in consequence of the blocking up of the femoral vein by coagulum. In these cases, the œdema is one-sided. A circumscribed œdema,

also accompanies erysipelas of the skin. Another source of double-sided cedema is anæmia (DaCosta).

Causes of General Dropsy. The most common are diseases of the heart, of the kidneys, or of the liver. Cardiac dropsy begins in the feet and ankles. Renal dropsy is usually much more general than cardiac, and does not, like cardiac, begin in the most dependent parts, but is often first noticed in the face and eye-lids. The proof that dropsy is renal is furnished by the presence of albumin and casts in the urine. The most usual kind of dropsy, dependent upon an affection of the liver, is abdominal dropsy (DaCosta).

Dropsies may be divided into three classes: Inflammatory, mechanical, and cachectic or hydræmic. Inflammatory dropsy is due to a moderate degree of inflammatory alteration in the coats of the blood vessels, and produces collateral cedema. Of this nature are cases of cedema glottidis, of hydrocele, and of hydrocephalus.

Mechanical dropsy is the result of some obstruction to the current of blood in the veins. The most frequent of the mechanical causes of general dropsy is valvular diseases of the heart.

Hydræmic or cachectic dropsy is the result of an impoverished and abnormally watery state of the blood. The most important cause of hydræmic dropsy is Bright's disease.

PRESCRIPTIONS FOR DROPSY.

R Spiritus chloroformi..... \mathfrak{M} xx.
Tincturæ digitalis..... \mathfrak{M} .x.
Infusi buchu..... \mathfrak{z} j.— \mathfrak{M}

Sig.: To be taken three or four times daily, and followed by a good drink of water. (In renal dropsy.) —Fothergill.

R Infusi digitalis. \mathfrak{z} iv.

Sig.: A tablespoonful two or three times daily. —Bartholow.

R Potassii bicarbonatis... .. gr. x.
Ferri et ammon. citrat gr. v.
Tincturæ digitalis \mathfrak{M} x.
Infusi buchu..... \mathfrak{z} j.— \mathfrak{M} .

Sig.: To be taken three times daily. (In cardiac dropsy with gouty tendency or debility.) —Fothergill.

DYSENTERY.

Called also "bloody flux," is an ulcerative colitis. It is a disease characterized by tormina, tenesmus, mucus, and mucus and blood stools, burning pain, with more or less constitutional disturbance (Bartholow).

Causes.—It occurs in both sexes and at all ages. Sudden arrest of perspiration by exposure to cold and dampness is one of the most common causes. It occurs in late summer and autumn and in warm rather than in a cold climate. It is prevalent in malarious regions. Impure air and water, bad or insufficient food are causes (Bartholow).

Symptoms.—In the epidemic form, dysentery may begin suddenly, but in the other forms it comes on gradually. There is more or less catarrh of the intestines, diarrhoea, chilliness, fever, and a feeling of malaise. In two or three days, pain in the descending colon is felt. It is described by the term tormina—"colicky pains." There is pain of a burning character in the rectum, with the sense of the presence of a foreign body, and with the desire to strain for its expulsion. Nothing comes away but mucus, either alone or tinged with blood. The tenesmus continues. There may be ten to fifty stools daily. The patient becomes weak early. His skin is dry, harsh and wrinkled, his pulse small, quick and feeble. The discharges emit a horribly fetid odor. In the severe cases, the patient passes into the stage of collapse, the pulse ceases at the wrist, hiccough comes on, the skin is covered with a cold sweat, the hands become cold and livid, the face is shrunken, the eyes deeply sunk, and the voice husky. In mild cases convalescence is established about the eighth day. In the more severe cases, the duration is more protracted (Bartholow).

Prognosis.—Is good in mild cases, but in severe cases bad.

Treatment.—1. Food. If the stomach is irritable, milk, with one-fourth lime-water, is the best food. If the digestion remains good, the patient can take milk, eggs, beef-juce, ice-cream, boiled custard, oyster-soups, mutton, chicken and beef-broth. Where there is much depression of the powers of life, egg-nog may be freely given. 2. Medicine. According to Bartholow,

the sulphate of magnesia in solution with dilute sulphuric acid is entitled to the first place as a remedy. It must be given in laxative doses, early. It serves a triple purpose: it empties the canal of retained feces, it lessens hyperemia by setting up an outward diffusion; its after effect is astringent and sedative. Ipecac is an excellent remedy, and must be given in the first stage, before the mucous membrane is stripped off, and in scruple to drachm doses, every four to six hours. The first doses empty the stomach, and the following ones produce copious bilious evacuations, called "ipecac stools." The utility of ipecac ceases when these stools are produced. It is best given in milk in twenty grain doses with aromatic powder added. Castor-oil, in purgative doses, in the first stage is very efficient. After the first stage is passed, an emulsion of oil (almond oil) and turpentine combined with opium is very serviceable. When destruction of the mucous membrane is beginning, the most effective remedies are corrosive sublimate, sulphate of copper, sulphate and oxide of zinc, acetate of lead, bismuth, arsenic, etc. Of this list, sulphate of copper and arsenic, combined with opium, are most effective. One drop of Fowler's solution and five to twenty drops of deodorized tincture of opium, every three hours, gives excellent results. One-twentieth of a grain of sulphate of copper with one-eighth of a grain of morphine every three hours is good treatment (Bartholow). Bismuth in large doses (gr. xxx. xl.) every four hours with carbolic acid is good. Excellent results are obtained by washing out the bowels with warm water. Very great relief is affected by the injection of starch and laudanum. Eight ounces of a strong solution of silver nitrate (gr. xx. to the ounce), thrown into the sigmoid flexure, is effective. Morphine hypodermically is effective.

External Applications. The cold, wet pack, the ice-bag, but generally hot applications afford more relief. The turpentine stupe is useful. If collapse comes on, active stimulation is necessary.

PRESCRIPTIONS FOR DYSENTERY.

R Tincturæ opii deodorat.....ʒss.
 Bismuth subnitratʒij.
 Aquæ menthæ pip.....
 Syrupi zingiberis—aa.....ʒj.—M.

Sig.: Shake bottle. Give one teaspoonful every two to four hours, to a child five years old. Half dose for a child one year old.
 —Smith.

R Vini ipecac.....ʒss.

Sig.: One drop every hour. (In acute or chronic form of children, with slimy stools.)
 —Ringer.

R Plumbi acetat.....gr. xxiv.
 Pulv. ipecac.....gr. iij.
 Pulv. opii.....gr. iij.—M.

Ft. massa et in pil. no. xii. div.

Sig.: One pill every two hours until blood ceases, then at longer intervals.
 —DaCosta.

R Hydrargyri chloridi mitis.....ʒj.
 In pulv. no. vii. div.

Sig.: A powder two or three times daily. (In epidemic form.)
 —Hull.

R Cupri sulphatis.....gr. ss.
 Magnesii sulphatis.....ʒj.
 Acidi sulphurici dil.....ʒj.
 Aquæ.....ʒiv.—M.

Sig.: A tablespoonful every four hours. (In acute form.)
 —Bartholow.

DYSMENORRHŒA.

Is painful menstruation. At the menstrual period women normally feel unwell, have a few vague pains in the loins, and an irritable temper.

Varieties and Causes.—1. Neuralgic or sympathetic dysmenorrhœa is seen in nervous or hysterical women, and is accompanied by neuralgia in other localities. 2. Congestive or inflammatory dysmenorrhœa occurs where there is excessive congestion of the uterus and ovaries from any cause. 3. Mechanical or obstructive dysmenorrhœa is due to some cause which mechanically obstructs the outflow of blood, as stenosis of the os uteri,

or sharp flexions. 4. Membranous dysmenorrhœa is sometimes associated with endometritis. 5. Ovarian (Pozzi).

Symptoms.—Pain occurs preceding, during, or following the menstrual flow. In the mechanical, the pain occurs with the appearance of the flow, and consists of a series of uterine cramps due to the effort of the uterus to expel blood clots from its interior. In the congestive, the pain precedes the flow, and is relieved when the latter becomes free. In the neuralgic, the pain is referred to the hypogastrium, left ovarian, and intercostal regions. It often occurs in the intermenstrual period, but is always aggravated at the time of the sickness. In the membranous, the pain lasts throughout the period, and until the expulsion from the uterus of the more or less complete membranous cast.

Treatment.—In the mechanical or obstructive, dilate the stenosis, correct the flexion, and prevent its recurrence. In the congestive, give saline laxatives, hot foot- and sitz-baths, vaginal injections, and ergot, with bromide of potassium. Instead of the ergot and bromide, fifteen to twenty grain doses of phenacetine every six to eight hours may be given. In the neuralgic, let the patient exercise in the open air, and give, iron, quinine, and other tonics. Pozzi has found the tincture of *pulsatilla*, given some days before the period, in five-drop doses, three times daily, quite efficient in the neuralgic form of young women. In the membranous, dilatation of the cervix just before the menstrual period, is sometimes effective. In the ovarian type, the bromides are the most serviceable. In any variety, where the pain requires it, potassium bromide and chloral may be given, with mustard plasters applied. As palliative treatment for the pain, give *asafoetida*, musk, tincture of *cannabis indica*, *belladonnæ* or *hyoscyamus*. Oxalate of cerium has been extolled. Wylie praises electricity, he inserts the positive pole in the cervix. Laudanum and valerian douches often afford relief when all other remedies fail. Nitro-glycerine and amyl nitrite are excellent for spasmodic cases (Pozzi).

PRESCRIPTIONS FOR DYSMENORRHŒA.

R Tincturæ cardamonii comp.....5ss.
 Spiritus chloroformi.....℥.xx.
 Liq. ammonii acetatis.....3ss.
 Tincturæ belladonnæ℥.x.
 Aquæ cinnamomi.....q. s., ad.....3j.—M.

Sig.: For one dose. (In congestive and spasmodic). —Pozzi.

R Liq. ammonii acetatis3iv.

Sig.: A tablespoonful every two or three hours, with the following:

R Pulv. ipecac..... gr. iv.
 In pil. no. xii. div.

Sig.: One every two or three hours. —Emmet.

R Extracti opii.....gr. v.
 Extracti cannabis indica.....
 Extracti hyoscyami.....aa.....gr. x.
 Pulv. Camphoræ.....gr. xxv.—M.
 Ft. massa et in pil. no. x. div.

Sig.: A pill two or three times daily. —McLane.

DYSPEPSIA.

Is difficult or painful digestion. It is usually chronic. A disordered digestion, lasting for a short time, is called indigestion.

Causes.—Dyspepsia is often an inherited condition. It may result from a deficiency in the quantity of gastric juice secreted, due to exhausting discharges, venereal excesses, masturbation, leucorrhœa and phthisis, and from the excessive use of narcotics, the tannin of tea, and the nicotine of tobacco. It may result from an excess in the gastric secretion, due to chronic hepatic and cerebral diseases, and to gout. It may result from a change in the quality of the gastric juice, due to ulcer and cancer of the stomach, gout, rheumatism, diseases of the kidneys, uterus and gall-bladder. Dyspepsia may result from pressure on the stomach by tight lacing, from positions assumed by shoemakers, needlewomen, writers, etc. It may result from mental emotion,

prolonged mental labor, anxiety, deficient or excessive physical labor, excess of starchy food, or from deficiency of meats, badly cooked food, too rapid eating, etc. (Loomis).

Symptoms. The most constant symptom is an abnormal appetite; it may be lost, increased, or perverted. There is a weight, dull pain, and a sense of burning in the epigastrium after the ingestion of food, accompanied by flatulence, heartburn, gastralgia, constipation or diarrhoea, a dull headache, and languor. Indiscretion in eating or drinking is apt to bring on an attack of sick headache. There is frequently a bitter taste in the mouth. In some dyspeptics the breath has a very offensive odor. Pyrosis, palpitation, dyspnoea and a severe pain referred to the heart (which makes the patient think he has heart disease), may be present. In some cases there is ringing in the ears, spots before the eyes, and vertigo. When in any case the dyspepsia has lasted a long time, chronic gastric catarrh will almost always be developed (Loomis).

Prognosis.—Dyspepsia in most cases can be cured, but the cure depends for the most part on the will of the patient.

Treatment. First, if possible, remove the cause. When the gastric juice is deficient in quantity, hydrochloric acid and pepsin are indicated. The vegetable bitters are efficient in these cases, and may be combined with alcoholic stimulants. When acid risings occur after ingestion of food, and are due to active fermentation, the sulphite of soda, or salicylic acid immediately after meals may prevent such changes. Saline waters will aid. When there is great irritability of the stomach, bismuth acts almost as a specific, and should be given in twenty grain doses before eating. Creosote, codeia, oxalate of cerium, and morphia may be employed to arrest vomiting. Dyspeptics should never wear corsets or belts about the abdomen. They should retire and rise early, eat slowly, and masticate well. No mental or physical work should be performed directly after or before eating. Horseback riding and walking in the open air should be insisted upon. A change of scene and climate works rapid cures in many instances. Dyspeptics should take a cold sponge-bath morning and evening (Loomis). A small quantity of acid wine at dinner is a good stimulant to the digestive function. A

moderate dose of whiskey, taken before meals, is a capital remedy to promote the appetite and the digestion (Bartholow).

PRESCRIPTIONS FOR DYSPEPSIA.

R Ammonii salicylatis..... ʒij.
Syrupi aurantii cort..... ʒj.
Aquæ menthæ pip.....ad..... ʒiv.—M.

Sig.: A tablespoonful half an hour before meals. (In fermentative dyspepsia.) —Sullivan.

R Tincturæ capsici..... ʒi. xvj.
Tincturæ nucis vomicæ..... ʒij.
Tincturæ gentianæ comp.....ad..... ʒij.—M.

Sig.: A teaspoonful in water three times daily, with $\frac{1}{2}$ gr. aloin at bedtime, avoiding starchy diet. (For aggravated dyspepsia with constipation.) —DuCosta.

R Bismuthi subnitratis
Sodii bicarbonatis.....
Pulv. cubebæ—aa..... ʒj.
Pulv. zingiberis gr. xx.—M.

In pulv. no. xii. div.

Sig.: A powder in a wineglassful of water before each meal.

—Clark.

R Tincturæ opii deodorat..... gtt. xij.
Magnesii calcinat..... gr. xij.-xxiv.
Sacchari albi..... ʒj.
Aquæ anisi..... ʒi ss.—M.

Sig.: Shake bottle. One teaspoonful every two hours to a child one year old, until relieved. —J. Lewis Smith.

R Bismuthi subnitratis..... ʒi ss.
Mucil acaciæ ʒj.
Sodii bicarbonatis..... ʒi ss.
Infusi calumbæ.....ad..... ʒviiij.—M.

Sig.: Two tablespoonfuls before meals. (Irritative dyspepsia with raw tongue.) —Fothergill.

Buttermilk-cure may be substituted for the milk-cure in cases of stomach disease (Bartholow).

Actæa (cimicifuga) is recommended for the dyspepsia of drunkards.

DACTYLITIS. (Syphilitic).

Is gummy in character, and hence belongs to the later stages of syphilis. It is a rare affection. The swelling usually terminates abruptly, and is sometimes very great. There is no complaint of pain. The skin is natural or bluish from venous obstruction.

Treatment.—Is that of tertiary syphilis.

DANDRUFF. (See Pityriasis).**DERBYSHIRE NECK.** (See Goitre.)**DROWNING.**

Remove from the mouth and nostrils all obstructions to the free passage of air to the lungs; loosen clothing about the chest. Extend the arms in the direction of the body above the head, and when the capacity of the chest is thus enlarged, throw fresh air into the lungs by a flexible tube passed into the trachea, and then replace the arms, pressing firmly upon the sides and sternum. These motions may be repeated ten or fifteen times per minute. A strong solution of ammonia may be passed under the nose.

EARACHE.

Treatment.—An excellent application in earache is the following:

R Morphia sulphatis gr. iv.
Aque destillatæ. 3j.—M.

Sig.: Fill the external meatus with the solution. —Bartholow.

Cocaine, five to ten per cent. solution, is the most effective remedy for earache (Bartholow).

The external auditory meatus filled with water as hot as can be borne is effective.

Counter-irritation by blistering fluid or croton-oil liniment behind the ear often removes earache (Ringer).

ECZEMA.

Is a non-contagious, vesicular, cutaneous eruption, with edema, pustules, exudation, or fission, and usually much itching. Eczema is catarrh of the skin (Tilbury Fox). It may safely be affirmed that very few persons pass through life without suffering from it in some measure. It is by far the most frequent of the diseases of the skin.

Causes. May be constitutional or local, or both combined. It often happens that the constitutional cause has disappeared before the patient is seen, and the affection remains, owing to the skin having contracted a bad habit. The chlorotic, the rachitic, the scrofulous, and the debilitated, are very liable to be attacked. Eczema may be caused by digestive derangement, and the parts most frequently attacked are the face, lips, arms and hands. Improper, insufficient or bad food, is very apt to call it forth. It is often seen in infants whose mothers have a deficient or watery secretion of milk. A fruitful cause of eczema is deficient excretion, constipation, or defective elimination by the kidneys. A predisposing cause is rheumatism. Diabetes mellitus may cause an eczema of the genital organs. Long-continued mental excitement, anxiety, grief, or over-study, may cause it. Eczema is met with at all periods of life, but occurs most frequently in children. Derangement of the uterus or its appendages, irritation of ascarides, or tapeworm, stricture of the urethra, dentition, internal medicines, exposure to great heat, or to extreme cold, or to acrid substances (as in the case of grocers, bakers, bricklayers, washerwomen, cooks, smiths, etc.), may cause eczema. Varicose veins, pressure by tumors, garters, and trusses, stimulating liniments, as croton-oil, lice, fleas, bugs, irritation of the razor, and of discharges from the genito-urinary organs, anus, meatus auditorius, nostrils and mouth, are common causes of eczema. The irritation of poisonous dyes used in some of the colored socks in the market, is apt to give rise to a variety of eczema of the feet.

Symptoms. There are four symptoms which are almost invariably present to a greater or less extent, namely: 1. Infiltration of the skin. 2. Exudation on the surface of the skin. 3.

Formation of crusts. 4. **Burning heat, or itching.** The infiltration is due to the transudation of serum from the blood-vessels into the tissues. The exudation, or "weeping" may take place constantly, or at intervals; it is then called moist eczema. If there is no exudation, it is called dry eczema. The crusts, composed of hardened exudation, are more or less present. If the patient be cleanly in his habits, the exuded matter is washed off, and the crusts may be wanting; and, vice versa, the crusts may be thick. When the patches of eruption are acutely inflamed, burning heat is complained of. When the disease becomes chronic, the burning heat is replaced by itching. The use of stimulating food or drink, or on getting warm in bed, or the slightest touch of the part, gives rise to an irresistible desire to scratch. Patients derive much positive pleasure from scratching the part. Instead of itching, formication is sometimes complained of. Scratching always aggravates the disease. The elementary lesion is of great importance. This may be: 1. An erythematous state of the skin. 2. A vesicle. 3. A pustule. 4. A papule, or a mixture of all these lesions. When the elementary lesion is an erythematous state of the skin, the disease commences as a simple inflammatory redness of the surface, without, at first, infiltration or exudation. The vesicular and pustular forms of eczema often form upon an erythematous ground.

Prognosis.—Is rarely serious. Attacks of eczema vary much in their duration. Some cases get well without treatment in a few weeks, others last for months or even years. When the eruption is localized it is more difficult of cure. Relapses are very much to be feared.

Treatment.—Some cases may be cured by either constitutional or local treatment, but generally it is advisable to employ a combination of both.

Constitutional Treatment.—Purgatives and aperients are often useful, but are merely aids to other treatment. If the tongue is loaded, the appetite bad, the liver torpid and the bowels costive, the following formulæ may be used:

R Hydrargyri chloridi mitis..... gr. xx.
 Pulv. scammonii comp..... gr. xL.—M.
 Div. in pulv. iv.

Sig.: One every week.

—Anderson.

℞ Quiniæ sulphatis.....gr. xij.
 Pulv. rhei.....gr. xxxvj.
 Hydrarg. cum cretæ.....gr. xx.
 Sacchari purificati.....gr. xx.—M.

In pulv. no. xii. div.

Sig.: Two daily. The dose to be so regulated that the patient has at least one full natural evacuation per day. Or the following may be given :

℞ Quiniæ sulphatis.....gr. xLviiij.
 Ferri sulphatis.....ʒij.
 Acidi sulphurici dil.....ʒiss.
 Magnesii sulphatis.....ʒij.
 Syrupi zingiberis.....
 Tinct. aurantii—aa.....ʒiss.
 Infusi calumbæ.....ad.....ʒxxiv.—M.

Sig.: A tablespoonful in a wineglassful of water thrice daily.

In some cases of eczema, diuretics are indicated. In strumous subjects, nourishing food, stimulants in moderation, and tonics are our sheet anchors. Severe cases of eczema have been cured by the administration of cod-liver oil and syrup of the iodide of iron. Twenty drops of the syrup of iodide of iron in a teaspoonful of cod-liver oil thrice daily, and the dose to be gradually increased to a tablespoonful, may be given. Cod-liver oil may be applied locally with benefit. Of nerve tonics, those which are most likely to be useful are strychnia and arsenic (in form of Fowler's solution). In chronic eczema, electricity is used with some benefit. The diet is of great importance, and must be carefully regulated.

Local Treatment.—Some cases of eczema are local diseases throughout their whole course, being due to local irritation, and are benefited more by local than constitutional treatment. The disease sometimes remains from habit. Our skins have the same tendency as ourselves to contract bad habits. The first thing is to remove the crusts with oil. Then dust the parts with absorbent powder two or three times daily. Soothing ointments are indicated, such as follows :

℞ Zinci oxidi.....ʒj.
 Acidi oleici.....ʒviiij.
 Vaseliniʒix.—M.

Sig.: Apply to parts.

—Anderson.

- R Pulv. camphoræ.....gr. xx.
 Pulv. zinci oxidi.....ʒij.
 Glycerini.....ʒj.
 Adipis benzoati.....ʒj.
 Cochinillini gr. j.
 Olei rosæ.....℥j.—M.
 Sig.: Apply to face two or three times daily. —Anderson.

- R Hydrargyri perchloridi.....gr. xij.
 Acidi hydrocyanici dil.....ʒij.
 Glycerini.....ʒiij.
 Eau de cologne.....adʒvj.—M.
 Sig.: Sponge the parts two or three times daily. —Anderson.

Of all the local means for the removal of limited eczematous eruptions, none are superior to blistering. The best and safest blistering agent is cantharides. The local varieties of eczema are: of the head, hairy portions of the face, lips, edges of the eyelids, nostrils, auricle, and external auditory passage, the flexor surfaces of the joints, the hands and feet, the legs and the genital organs.

PRESCRIPTIONS FOR ECZEMA.

- R Acidi citrici.....gr. xv.
 Aquæ lauro-cerasi.....ʒj.
 Olei rusci (birch)gtt. xv.
 Ungt. aquæ rosæ.....ʒx.—M.
 Sig.: Use thrice daily. Use starch powder between the applications. Carefully attend to diet. (For acute eczema.) —Monin.

- R Glyceriti anyli.....ʒviiss.
 Acidi tannici.....
 Hydrargyri chlo. mit.....aa.....gr. xv.—M.
 Sig.: Apply morning and evening. (In dry eczema with itching.) —Vidal.

- R Ungt. hydrargyri oxidi rubri.....ʒij.
 Ungt. sulphurisʒij.
 Acidi carbolicæ.....gr. iij.
 Unguenti simplicis.....ʒss.—M.
 Sig.: Apply to the affected parts. (In chronic eczema.) —DaCosta.

- R Tincturæ belladonnæ.....ʒss.
 Sig.: Five drops thrice daily to a child of two years. (In infantile eczema.) —Bartholow.

℞ Pulv. acidi salicylici..... gr. xv.—xxx.
 Pulv. zinci oxidi.....
 Pulv. amyli.....aa.....3ij.
 Vaselini puri.....3vj.—M.
 Ft. ungt.....
 Sig.: Apply locally, and cover with cotton after rubbing ointment in. (In papulous or squamous eczema.) —Lassar.

℞ Infusi cinchonæ.....3vj.
 Aquæ calcis.....3ixss.
 Tinct. lupulinæ
 Succī conii.....aa.....3ij.—M.
 Sig. A wineglassful thrice daily. (In chronic eczema of the aged.) —Neligan.

℞ Ferri et ammonii citratis.....3j.
 Potassii citratis.....3ij.
 Liquor potassii arsenitis.....3i—ij.
 Tinct. nucis vomicæ.....3ij.
 Tinct. cinchonæ comp.....ad.....3iv.—M.
 Sig.: A teaspoonful in water after meals, as a tonic and alterative. (In eczema.) —Bulkley.

℞ Resorcin
 Zinci oxidi.....aa.....3j.
 Ungt. aquæ rosæ.....3x.—M.
 Ft. ungt.....
 Sig.: Apply locally. (In chronic indurated eczema of infants.) —Fleisburg.

EMISSIONS. (Involuntary Seminal.)

By involuntary seminal emissions is meant the ejaculation of semen and the venereal orgasm without any voluntary effort, either natural or unnatural.

Involuntary emissions occurring during sleep are common, taking place with erotic dreams. Occurring after intervals of several days in persons of continent habits, they are physiological rather than pathological. They denote simply a certain amount of functional activity of the generative organs. They do not imply a morbid condition nor do they lead to any morbid effects. They occur especially when habitual sexual intercourse is interrupted from any cause. Under these circumstances they are manifestations of health rather than of disease.

Occurring more frequently, the emissions denote a morbid crethism and weakness of the organs of generation. They occur sometimes nightly and sometimes even repeatedly during the same night. They then call for remedial measures.

Occurring in persons debilitated from any cause, they may take place without any erection and with little or no venereal excitement. They occur sometimes during the day, and are called diurnal. Venereal excesses, or unnatural abuse, are the causes of this morbid frequency. The mind becomes depressed. The patient fancies he is impotent, his constitution ruined, and that there is danger of insanity. They go from one physician to another, and upon patients of this class quacks prey largely (Flint).

Pollution is a term applied to involuntary seminal emissions, attended by venereal orgasm, more or less marked. Dr. Keyes writes as follows of pollution: "Nocturnal pollutions are exceedingly common. They usually accompany erotic dreams."

Nocturnal emissions in moderation are entirely natural, and by no means a sign of disease. Their frequency compatible with health varies with the purity of mind and sexual vigor of the patient. A man who is happily married rarely has nocturnal emissions while living with his wife, but, if he leaves her for several weeks, it is natural and entirely the rule that there should be a formation and collection of semen, which distending the seminal vesicles, excites erotic fancies, and escapes at the conclusion of a dream. Any man suffering from ungratified sexual desire is normally in a condition demanding relief for his over distended seminal vesicles, and, if that relief be not afforded in some way by the patient, it will come spasmodically during sleep. Occasionally nocturnal emissions may be over-frequent, and indicate a condition of irritation in the deep urethra which requires treatment (Keyes).

Treatment. When emissions do not exceed three times weekly they should be disregarded. Where they become very frequent, as nightly or several times a night for a considerable time, there should be an attempt made to correct the habit. Purify his thoughts, elevate his tone, and get him if possible happily married. The patient should endeavor to sleep soundly

by tiring himself out through the day by physical work. Dry friction, cold bath and cold douche locally are useful. He should sleep on a hard bed lightly covered. The stomach should not be full on retiring. Lying on the back with the bladder full of urine, tends to beget erections. To avoid this, the patient should tie a towel around his waist on retiring, with a hard knot in the back over the spine. Besides the above means, bromide of potassium, camphor and lupulin may be given internally, with strychnine and a mineral acid, and locally decided advantage may be derived from the gentle use of the steel sound, as in neuralgia of the vesical neck. Mechanical devices appear from time to time for treating pollution, but they usually do more harm than good. Keyes used an appliance which started a battery and gave an electric shock in the back when erection came on. Verneuil used a similar instrument which caused a bell to ring when erection came on. A ring which lightly encircles the penis, but when distended by erection causes pain and awakens the patient has been used. Marriage is always remedial in physiological cases (Keyes).

PRESCRIPTIONS FOR EMISSIONS.

- | | | | |
|-------|-------------------------------------|---------------------|-------------|
| R | Potassii bromidi..... | 3j. | |
| | Sodii bicarbonatis..... | gr. xv. | |
| | Infusi digitalis..... | 3ss. | |
| | Atropinae sulphatis..... | gr. $\frac{1}{6}$. | —M. |
| Sig.: | To be taken at bedtime. | | —Gross. |
| R | Lupulinae | gr. x. | |
| | Pulveris camphoræ..... | gr. vj. | |
| | Extracti belladonnæ..... | gr. ij. | —M. |
| | In pil. no. xii. div. | | |
| Sig.: | One pill thrice daily. | | —Bartholow. |
| R | Tincturae cantharidis..... | 3ij. | |
| | Tincturae ferri chloridi..... | 3vj. | —M. |
| Sig.: | Twenty drops in water thrice daily. | | —Wood. |

EMPHYSEMA. (Pulmonary.)

Emphysema in general signifies the presence of air in the interstitial connective tissue. In the lungs, however, there are two kinds of emphysema—interlobular and vesicular; the former arises from rupture of the air-cells, causing a communication between them and the interlobular connective tissue, and the latter, the more common, consists in an abnormal accumulation of air within the air-cells.

Emphysema is essentially a chronic affection; it comes on slowly, and when once developed is permanent (Loomis and Flint).

Causes. Are forced expiratory efforts, the glottis being closed or narrowed, as in violent coughing, straining at stool, etc. It is developed in the upper lobes of the lung. Various injuries and diseases of the chest which limit the movements of the lungs, as curvature of the spine, pleural adhesions, hydrothorax, tumors, pneumonia, perforating wounds of the chest, or injury of the lung by the extremity of a fractured rib, may cause emphysema of the lung (Loomis and Flint).

Symptoms. The most prominent and constant subjective symptom of emphysema is dyspnoea, which is increased by physical exercise. It is worse during the cold of winter. There is often a smothering sensation in the chest. There is no fever. The pulse is feeble, and the body cool and cyanotic. In extreme cases, lividity is marked. Usually there is no pain in the chest. The nostrils are distended, the voice is feeble, and the capillary circulation is imperfect. The temperature of the body is usually sub-normal. There is distension of the jugular veins, and vertigo is common. There may be oedema of the feet and ankles. Emphysematous patients are especially liable to hemorrhoids.

Physical Signs. - On inspection, it will be noticed that the chest is "barrel-shaped." The lower portion of the chest seems contracted. The apex of the heart will be found beating lower down than normal, and more toward the median line. On palpation, the vocal fremitus, varies. In senile emphysema, the vocal fremitus is usually increased. The percussion sound is vesiculotympanic. On auscultation, the inspiratory sound is either

short or feeble, or actually suppressed, while the expiratory is greatly prolonged (Loomis).

Prognosis.—It rarely, if ever, destroys life, but when once developed, is never recovered from.

Treatment.—As this disease is incurable, our treatment must be palliative. Iron and the sulphate of quinine in small doses, may be given with benefit. Cod-liver oil, bitter infusions, mineral acids and stimulants are all useful. The diet should be of the most nutritious character, and composed largely of animal food. Exercise in the open air should be taken. Quebracho is a useful drug for emphysema. For the bronchitis which accompanies emphysema, iodide of potassium in five to ten grain doses thrice daily is serviceable. For the asthmatic attacks, morphine and atropine are useful.

PRESCRIPTIONS FOR EMPHYSEMA.

R Liquoris potassii arsenitis.....gtt. ij.
 Potassii iodidigr. x.
 Syrupi tolu5ss.
 Aqua.....5ss.—M.
 Sig.: This dose t. i. d.

R Ammonii iodidi5j.
 Liquoris potassii arsenitis5ss.
 Syrupi tolutan.....3j.—M.
 Sig.: A teaspoonful every four hours.

—Bartholow.

EMPYEMA.

Called, also, suppurative pleurisy, or pyothorax, is characterized by the accumulation of a purulent liquid in the pleural cavity. It is usually confined to one side.

Cause.—Is not always known. It may be of traumatic origin. It may result from exhausting diseases or debility. It often complicates acute and chronic infectious diseases. Chronic tubercular pleurisy is very apt to be suppurative in character. It may be secondary to abscess of the liver, or in the abdominal cavity, or to chronic phthisis. It is sometimes secondary to lobar pneumonia (Loomis).

Symptoms.—If the inflammatory process is acute there will be chills, fever, a rapid pulse, severe pain in the affected side, great prostration, anxious expression and typhoid symptoms; these cases usually terminate fatally within two or three weeks. The symptoms of chronic empyema are very often obscure. The patient rarely suffers from local pain—there is simply a sense of uneasiness, or weight in the affected side, loss of flesh and strength, pale countenance, diurnal chill followed by profuse sweats. There are cough, weak voice, dyspnoea, etc. A positive diagnosis may be made by an exploratory puncture. If an empyema is about to open externally, it will protrude between the ribs, and give a sense of fluctuation, and become red. It may open into a bronchial tube and be followed by profuse purulent expectoration. The chest walls gradually retract. It may open into the peritoneal cavity and be followed by a fatal peritonitis (Loomis).

Prognosis.—Unfavorable.

Treatment.—An opening should be made at the bottom of the pleural sac, allowing the pus to escape freely. The pleural cavity should be daily cleansed by the injection of tepid water to which a very small quantity of carbolic acid (one per cent.) is added. Aspiration should first be tried. In children simple aspiration frequently effects a cure (Flint). If aspiration is resorted to, a large-sized needle should be used, and only a small portion of the fluid removed the first time. Aspirate every third, fourth or fifth day. Never continue the removal of pus in empyema after the patient complains of constriction in breathing. If a permanent opening is to be made, let it be made in the axillary line in the seventh or eighth intercostal space, and a quarter-inch rubber drainage tube should be introduced, and so fastened that it will remain. The pleural cavity should not be washed out (Loomis). Tonics, such as quinine, cod-liver oil and iron are always indicated and exercise in the open air.

PRESCRIPTIONS FOR EMPYEMA.

R Mixture ferri et ammon acetat . . . §iv.

Sig.: One to two teaspoonfuls four times daily, with quinine and stimulants. (In chronic cases.)

—DaCosta.

- ℞ Liquor iodinii comp.....ʒj.
 Aquæ destillatæ.....ʒxv.—M.
 Sig.: Inject after aspirating the pus. —Bartholow.
- ℞ Quinæ sulphatis.....ʒij.
 Aquæ.....ʒxij.—M.
 Sig.: Inject after evacuating the pus. —Ringer.
- ℞ Aquæ chloriniiʒj.
 Aquæ destillatæ.....ʒix.—M.
 Sig.: To wash out the pleural cavity after the evacuations of
 the pus. —Ringer.

ENDOCARDITIS.

Is an inflammation of the endocardium. In adults the left heart is oftenest affected. The inflammation is, in the majority of cases, situated on the valves and chordæ tendineæ. Vegetations appear upon the endocardium. These vegetations may attain the size of a pea and are favorable points for the detachment of emboli (Flint).

Causes.—Primary, or idiopathic endocarditis is extremely rare. It is secondary to pleuritis, pneumonia and pericarditis, but, very more frequently, secondary to acute rheumatism. About one-third of the cases of acute rheumatism are complicated by endocarditis (Bartholow). It is produced by the same cause that produced the rheumatism, and not by metastasis (Flint).

Symptoms.—The patient may complain of an obscure sense of distress in the præcordia, not amounting to pain. The action of the heart may be morbidly excited—palpitation. There is an endocardial murmur. The murmur is of a soft, or bellows character. It accompanies the first sound of the heart. It is heard loudest at or near the apex of the heart (Flint). There may be paroxysmal dyspnœa, the face may be flushed and even cyanotic (Loomis).

Prognosis.—The danger is not immediate, but remote.

Treatment.—Sinapisms and stimulating liniments to the præcordia are indicated. Alkaline remedies lessen the liability to fibrinous deposits upon the valves. The patient should avoid physical exertion, mental excitement, a stimulating diet, and the use of alcohol. A tablespoonful of the infusion of digitalis should be given every four hours (Flint and Bartholow).



Treatment.—Keep the patient in bed. It is safe to begin the treatment in every case of acute intestinal catarrh by the administration of castor oil. The diet should consist of milk with lime-water. The yolk of eggs may be given with the milk. Prepared meats and light broths are useful. No fats should be allowed, or bread or any form of starchy food. Stimulants may be given when there is prostration. The abdomen should be covered with warm fomentations. Opium is the most efficient agent and must be given in half grain doses every two or three hours. When the catarrh is of malarial origin, quinine must be given in large doses. If it is the result of exposure to wet and cold, diaphoretics are indicated. Chronic intestinal catarrh may be treated by astringents; the best are nitrate of silver, acetate of lead, and sulphate of copper. Sponging the abdomen with cold salt water is good (Loomis).

PRESCRIPTIONS FOR ENTERITIS.

R Pulv. ipecac comp.....ʒj.
Bismuthi subnitratisʒij.—M.

In pulv. no. xxiv. div.

Sig.: A powder every two to four hours for a child five years old.
—J. Lewis Smith.

R Pulv. opii.....gr. v.
Bismuthi subnitratisʒij.—M.

In pulv. no. xx. div.

Sig.: A powder every two to four hours for a child five years old.
—J. Lewis Smith.

R Liq. potassii arsenitis.....gtt. L.
Tincturæ opii.....ʒj.
Aque.....adʒij.

Sig.: A teaspoonful before meals thrice daily. (In chronic and malarial form.)
—Bartholow.

R Tinct. opii deodorat.....ʒj.

Sig.: Ten drops every second or third hour, according to age, to the point of tolerance.
—DaCosta.

EPILEPSY. (Falling Sickness.)

Is a chronic paroxysmal affection. The paroxysms are characterized by loss of consciousness and convulsive movements of the muscles. Convulsions similar to those of epilepsy are symptomatic of different cerebral affections, of anæmia, of injuries of the head, and of strychnia, and are distinguished as epileptiform. Epilepsy is a functional affection. In the majority of cases, the loss of consciousness is as sudden as if produced by a stunning blow upon the head, and the person falls. In a minority of cases, there is a brief warning of the approaching fit. It is a sense of a "cold vapor" emanating from some part of the body and mounting to the head, and has been called the *aura epileptica* (Flint).

Cause.—Thirty per cent. of epileptics give a history of an inherited tendency. Children of consanguineous marriages are often epileptics. It most frequently develops between the ages of ten and twenty. Puberty and injury to the peripheral nerves, the skull, meninges, and diseases of the brain substances are exciting causes. It may arise from irritation of the genital organs, anomalies of menstruation and phimosis (Loomis). It is very generally believed that the immediately exciting cause of an epileptic paroxysm is cerebral anæmia resulting from vaso-motor spasm. Venereal excesses, and habits of masturbation have been supposed to be frequent causes. Flint relates the case of a female patient who experienced the first paroxysm during the first act of sexual congress after marriage. Subsequently, a paroxysm occurred at each marital connection, and she became a confirmed epileptic. It is well known that dogs, cats and other domestic animals are liable to epilepsy (Flint).

Symptoms. (Of grand mal.) The onset of the paroxysm is often marked by a loud, sharp cry, and the epileptic falls heavily. Drawing the head toward one shoulder is sometimes a warning of an epileptic seizure. There is complete loss of consciousness. The face is extremely pale. The pupil is invariably dilated at the onset and does not contract on exposure to bright light and the eyes are fixed and staring, and the muscles of the face, trunk and extremities are rigid. Opisthotonos may occur. The face

soon becomes dark from asphyxia. Clonic convulsions succeed the tonic spasms. The tongue is thrust between the teeth. The teeth are sometimes broken. The patient froths at the mouth, and from the injuries to the tongue the saliva is often bloody. The body is often bathed in a profuse sweat. The fit may terminate suddenly or gradually. The patient has no recollection of the attack, and appears as if waked out of a deep sleep.

(Of *petit mal*).—There is momentary loss of consciousness, the patient suddenly stops; has a fixed gaze for a second or two, his mind is confused, and then proceeds as if nothing had happened. There may be nocturnal attacks of epilepsy. The only evidence of these attacks may be the tongue which shows indents of the teeth, and the pillows may be blood-stained.

Number of Fits.—The first fit may also be the last. They may occur once a year, or two or three times in twenty-four hours. In women it sometimes seems to be connected with the menstrual epoch. Eighty per cent. of all epileptics are attacked oftener than once a month.

Results of Epilepsy.—There may be impairment of the mental or physical condition. Of the mental faculties, memory is most often impaired. A subnormal temperature is very common (Loomis).

Treatment.—When an epileptic fit is once established there is little to be done but to prevent the patient from injuring himself. Try to discover the cause and remove it. The bromides are at the present time used more than any other remedies. Cod-liver oil is useful. Nearly all the drugs of the *materia medica* have been tried (Loomis).

PRESCRIPTIONS FOR EPILEPSY.

R Ferri bromidi..... gr. iv.
Potassii bromidi..... ʒj.
Syrupi simplicis..... ʒij.
Aque..... ad..... ʒviiij.—M.

Sig.: A tablespoonful twice daily. (In anæmic patients.)

—Bartholow.

R Extracti conii fluidi (Squibbs).... ʒij.

Sig.: Fifteen to sixty minims three times daily.—

Spitzka.

R Lobelinæ hydrobromat.....gr. $\frac{1}{2}$ -j.
 Aquæ destillatæ.....℥iiss.—M.

Sig.: A teaspoonful three or four times a day. —Bartholow.

R Potassii bromidi.....
 Sodii bromidi.....
 Ammonii bromidi.....aa.....℥iij.
 Potassii iodidi.....
 Ammonii iodidi.....aa.....℥iss.
 Ammonii carbonat℥j.
 Tincturæ calumbæ.....℥iss.
 Aquæ.....q. s., ad. ft.....℥viij.—M.

Sig.: A teaspoonful and a half before each meal, and three at
 bed time. —Brown-Sequard.

EPISTAXIS.

In nasal hemorrhage.

Causes.—The mucous membrane of the nose is full of blood vessels, and bleeds easily. It may be caused by ulceration of the membrane, by vascular tumors, and by mechanical causes, as valvular disease of the heart (Bartholow).

Symptoms.—There may be a sense of fullness of the head, headache, noises in the ears, and vertigo. The blood may come drop by drop from a single nostril, or from the posterior nares. The quantity of blood discharged varies; it may be an ounce or even a pint or quart. Epistaxis may occur periodically as a manifestation of malarin, or take the place, vicariously, of the menstrual or hemorrhoidal flux (Bartholow).

When the bleeding occurs in sleep from the posterior nares, and is swallowed, there may be, if vomiting of the blood occurs, much difficulty in ascertaining the true source (Bartholow).

Treatment. Small pellets of ice may be introduced into the nares, while a block of ice, hollowed out to fit the nose, may be put on outside. Simply pressing the nares together, to enable the blood to coagulate, may often suffice. If pressure and cold fail, a solution of tannic acid, or of alum, or of acetate of lead, may be thrown into the nares, and if these fail, a solution of Monsel's salts. All other expedients failing, the posterior nares must be plugged (Bartholow).

Small doses of aconite, given frequently, will often quickly check the nose-bleeding of children and of plethoric people. Cocaine may be used locally. Digitalis controls epistaxis, hæmoptysis, and menorrhagia. A hot foot-bath, with or without mustard, is efficient. Spinal hot-water bag to the cervical and and upper dorsal vertebræ is serviceable (Ringer).

PRESCRIPTIONS FOR EPISTAXIS.

R Pulv. aluminis.....

Pulv. acidi tannici.....aa..... ʒj.—M.

Sig.: To be insufflated into the nares anteriorly and posteriorly.
—Sajous.

R Extracti geranii mac. fluidi.....ʒj.

Aquæ..... ʒiij.—M.

Sig.: Syringe the nostrils, or plug with cotton saturated with the fluid.
—Shoemaker.

R Antipyrin.....ʒij.

In capsules no. xxiv. div.

Sig.: One, two or three to be taken as required. To be used with local treatment.
—Robinson.

ERYSIPELAS.

Is a self-limited febrile affection, characterized by a local inflammation of the skin, and accompanied by constitutional symptoms. It is contagious (Bartholow).

Causes.—The streptococcus erysipelatis is regarded as its specific cause. It prevails in hospitals and epidemics follow in the paths of armies. There are two kinds: idiopathic and traumatic. It is a disease, of all ages, and occurs at all seasons. An abrasion of the surface or wound is the usual starting point.

Symptoms.—The initial symptom is a chill. Headache comes on with the fever; and there are nausea, bilious vomiting, and entire loss of appetite. A sense of heat and tension is felt in the skin, which becomes red, cedematous and shiny. The red color disappears on pressure. The inflammation reaches its highest point on the second or third day, and on the fourth, fifth or sixth day the redness is fading. Desquamation of the skin takes place. The margin of the redness is not sharply defined,

but the swelling forms an abrupt ridge (Bartholow). Traumatic erysipelas begins as a bright red blush about the point of injury. Idiopathic erysipelas is most commonly facial, starting from either the nose, eyelid or ear (Loomis).

Differential Diagnosis.—Erysipelas may be confounded with erythema and urticaria. Erythema is a superficial redness without inflammation—without heat and swelling—is without fever, and does not desquamate. Urticaria occurs in the form of wheals that itch a good deal and disappear in a few hours (Bartholow).

Treatment.—In the more severe cases quinine combined with belladonna is good treatment.

R Quininæ sulphatis.....gr. xL.
 Extracti belladonnæ.....gr. iij.—M.
 Ft. pil. no. x.

Sig.: One pill every four hours.

Tincture of the chloride of iron, in half-drachm doses every four hours, is much commended. Milk, eggs, animal broths, and when necessary stimulants should be given. The bowels and kidneys should be kept active.

Local Applications.—As a rule, irritating applications do more harm than good. Bartholow has seen mercurial ointment diluted ten times with lard very successful; or vaseline ℥j, acid carbolic ℥ss, or less, which should be brushed over the inflamed area three or four times a day.

PRESCRIPTIONS FOR ERYSIPELAS.

R Tincturæ ferri chloridi.....
 Syrupi simplicis—aa.....℥j.
 Aquæ.....℥ij.—M.

Sig.: A teaspoonful well diluted every two or three hours.

—Charity Hospital.

R Plumbi acetatis.....℥j.
 Tincturæ opii.....℥j.
 Aquæ.....ad.O. j.—M.

Sig.: Shake the bottle well, and wet cloths with the lotion and apply to the affected parts.

—Charity Hospital.

R Acetanilidi.....℥j.

Ft. in no. xv. capsules.

Sig.: Two capsules as required for fever.

—Osler.

ERYTHEMA.

By this term is meant simple, superficial inflammation of the corium, the most trifling of all inflammations of the skin, and under it we must include roseola, strophulus and pityriasis.

Symptoms.—There is no fever. The local symptoms are not severe. There is no distinct abrupt line of demarcation between the healthy and diseased skin. It does not usually spread rapidly. The itching is moderate. The color of the eruption is usually pink. The causes are very various.

Erythema capitis or pityriasis is usually a very chronic affection and attacks the scalp and hairy parts of the head. Chilblain is a form of erythema which occurs in cold weather, and attacks the fingers, toes, ears, nose and cheeks.

PRESCRIPTIONS FOR ERYTHEMA.

- | | | |
|-------|---|---------------|
| R | Zinci acetatis.....gr. ij. | |
| | Aquæ rosæ.....3j. | |
| | Ungt. aquæ rosæ.....3j.—M. | |
| Sig.: | Apply locally. | —Fox. |
| R | Pulveris camphoræ.....5ss-j. | |
| | Spiritus vini rectificati.....3j. | |
| | Sodii boratis.....gr. xl. | |
| | Aquæ rosæ.....3viij.—M. | |
| | Ft. lotio. | |
| Sig.: | Apply locally several times daily. | —Tilbury Fox. |
| R | Pulveris camphoræ.....5ss-j. | |
| | Zinci oxidi.....5iv. | |
| | Pulveris amyli.....3j.—M. | |
| Sig.: | Dust on lightly and do not allow to cake upon the skin. | —Bulkley. |

ECLAMPSIA.

Is the term applied to convulsions, tonic and clonic in character, the foundation of which is laid in processes connected with pregnancy, labor, and childbed. It occurs once in about five hundred pregnancies. The attack resembles that of epilepsy, the cry only lacking (Lusk).

Terminations.—In favorable cases, after the expulsion of the ovum, the attacks cease or diminish in frequency and intensity.

Prognosis. Is always serious. The earlier the convulsions occur in labor the more unfavorable the prognosis (Lusk).

Treatment.—The urine of pregnant women should be examined occasionally. If convulsions threaten, the nervous irritability should be held in check by rectal injections of chloral and bromide of potassium (thirty grains each). From one-sixth to one-fourth of a grain of morphia should be injected hypodermically. The lower bowel should be cleaned out by an enema, and a cathartic should be given by the mouth (Lusk).

EMBOLISM.

An embolus is any solid body floating in the blood current. Embolism is the occluding of a vessel by an embolus. Arterioles and capillaries are the usual seats of embolism. In general an embolus is part or all of a dislodged thrombus.

Causes. A slowing of the blood current, or a change in the walls of the vessels, a weak vis-a-tergo, vegetations on the valves of the heart, a foreign body introduced into a vessel, or a fracture, may cause embolism (Bartholow).

Symptoms.—Embolic obstruction of a member is announced by a sudden and often intense pain and a chill, with numbness, loss or diminution of tactile sense, coldness, pallor of the skin, and a feeling of deadness and weight, and paralysis of the muscles (Bartholow).

Treatment.—Ten grains of the carbonate of ammonia may be administered in a tablespoonful of the solution of the acetate, three or four times each day. Another remedy is the phosphate of soda, in drachm doses, three times daily for many weeks (Bartholow).

ENURESIS.

Called, also, incontinence of urine, is a common and troublesome infirmity of children. It occurs both in boys and girls, but is more common in the former. In many children it dates back to infancy, but in others it begins at six or seven years. There

is an increase in the circular muscular fibres at the urethral orifice which constitutes the sphincter vesicæ, an unstriped muscle and not under the control of the will. A second sphincter which aids materially in the retention of the urine is formed by the compressor urethræ, surrounds the whole membranous portion, and is a striped muscle and therefore controlled by the will (Smith).

Causes.—In all cases the urine should be examined. The chief causes are: 1. Too great acidity of the urine, which will irritate and cause the bladder to contract. 2. Increased quantity of urine. This occurs from the free use of water or milk, or renal disease. 3. A vesical calculus. This will cause pain in passing water. Sound for stone. 4. Excessive irritability of the muscular fibres of the bladder. This is the most frequent cause of enuresis in children. Belladonna relieves this condition. 5. Weakness of the muscular fibres which constitute the sphincter. This occurs in run down conditions. 6. Reflex action. This may be from phimosis, stricture of the urethra, irritation of ascarides, fissure of the anus, onanism, or vulvitis. 7. A psychical cause to which Bartholow alludes. The patient dreams that he is in a convenient place to pass water. 8. Malformation of the bladder. These are various (Smith).

Prognosis.—Depends on the cause or causes.

Treatment.—For the excessive acidity of the urine, three to five drops of the liquor potassæ should be given three or four times daily in a wineglassful of water. In belladonna we possess an agent which diminishes the functional activity, or inherent irritability of the bladder when the latter is in excess. Five drops of the tincture may be given every evening, to a child of five years, and the dose increased by one drop every second day. If the enuresis be due to an abnormally large secretion of urine, the liquid ingesta in the latter part of the day should be restricted. If it be due to diabetes, or chronic nephritis, treat these conditions. If it be due to a vesical calculus, lithotomy is indicated. If the cause of the enuresis be due to irritation in contiguous parts, as the rectum, penis or vulva, treat these conditions. If the cause be due to atony of the sphincter, nuxvomica and ergot are indicated.

PRESCRIPTIONS FOR ENURESIS.

- R Tincturæ belladonnæ ʒj.
 Sig.: Ten to twenty drops thrice daily. —Ringer.
- R Acidi benzoici..... ʒij.
 Aquæ cinnamomi ʒvj. —M.
 Sig.: A tablespoonful thrice daily. —Hartshorne.
- R Tincturæ ferri muriatis..... ʒj.
 Decocti uvæ ursæ..... ʒvj. —M.
 Sig.: A tablespoonful two or three times daily. —Hillis.
- R Santonini..... gr. xvj.
 Olei ricini..... ʒj. —M.
 Sig.: One or two teaspoonfuls before breakfast for two or three mornings. —Ringer.
- R Collodii..... ʒss.
 Sig.: Put a drop in the meatus to seal it at bed time. Remove with finger-nail in morning. —Corrigan.
- R Chloral hydratis..... ʒj.
 Syrupi tolutani ʒiiss. —M.
 Sig.: A teaspoonful thrice daily. (For infantile incontinence). —DaCosta.
- R Atropinæ sulphatis..... gr. j.
 Aquæ destillatæ..... ʒj —M.
 Sig.: Four to eight drops in water. (For children). —Bartholow.

ENDOMETRITIS.

Is an inflammation of the endometrium. It is acute and chronic. The acute is a rare disease. The chronic is a frequent disease.

Causes of the Acute. —This form occurs in young girls after acute fevers, or it may be due to taking cold during menstruation, or to an extension of inflammation from other parts, to chronic catarrh, or laceration of the cervix.

Symptoms. —Leucorrhœa. The discharge is thick, and often profuse, and resembles the white of an egg. Menorrhagia may be present. There is a sense of fullness or pain in the pelvis and loins.

Treatment. Treat the cause. Warm mucilaginous injections, salines and rest will give the best results.

The chronic form is divided into corporeal and cervical.

Causes.—It may follow the acute disease, or start as a chronic affection from specific or other constitutional causes. It may be due to lacerated cervix, violence during coitus, ill-fitting pessaries, etc.

Symptoms.—Leucorrhœa is the principal symptom.

Treatment.—Treat the cause. If from lacerated cervix, reduce the size of the uterus by leeches, scarifications, iodine, hot-water injections and glycerine tampons. If the leucorrhœa still persists operate for laceration of the cervix. If there is eversion of the cervical mucous membrane scarify it. If there be chronic catarrh of the cervix, relieve the congestion by local measures, and use astringent applications to the cervical mucous membrane. If the body of the uterus is involved, the patient is usually sterile. In this case dilate the uterus with tents left in for twenty-four hours. After dilatation wash the cavity with carbolic acid water (40 per cent.) and apply to the endometrium by means of cotton on an applicator, solutions of corrosive sublimate, zinc sulphate, or Monsel's solution and glycerine, repeating the application every three or four days. There should be absence from sexual intercourse (Pozzi, Skene and Gooddell.)

EPIDIDYMITIS.

Is an inflammation of the epididymis. It is the most common of all the diseases of the testicle. It occurs at all ages. One attack predisposes to another. It is often double. Fournier states that epididymitis occurs once for every eight or nine cases of gonorrhœa. In some individuals every attack of gonorrhœa is attended by a swollen testicle (Keyes).

Causes.—Traumatic violence and cold may cause it. Prolonged sexual excitement may cause it; but urethral inflammation or irritation from gonorrhœa, stricture, or the passage of instruments is by far the most active cause. It is an extension of the inflammation from the orifice of the ejaculatory duct to the epididymis.

Symptoms.—First attacks, like first attacks of gonorrhœa, are usually the most severe. If there be a gleety or gonorrhœal

discharge, it stops after the testicle begins to swell, but soon returns. There is a feeling as if the cord were being pulled upon, and pain in the back. There is frequent desire to urinate, and intense pain in the testicle, which is swollen. The pain is of the sickening variety, making patients feel faint. Rest on the back with the testicle raised modifies the pain. Epididymitis lasts about two weeks. Hardness of the epididymus may remain behind for months or even years. Sterility may be produced if the epididymitis be double. The testicles do not atrophy. The patient is by no means impotent. He ejaculates semen, but it contains no spermatozoa.

Treatment.—A suspensory bandage should be worn during the existence of urethral disease. Rest on the back, elevation of the testicle, hot flax-seed poultice, and a laxative, may be all that is necessary. In severe cases, the testicle is enveloped from the start in a tobacco poultice. The poultice is made by mixing a paper of any fine-cut tobacco (3j.) in about (3x.) of hot water, bringing the whole to a boil, and then adding ground flax seed until the proper consistence. The poultice is sprinkled with laudanum and placed upon the testicle as hot as can be borne, and covered with oiled silk. This poultice should be renewed every eight hours, until the indurated epididymus has lost its sensitiveness to pressure. Powdered opium (ʒi-ii.) mixed with stramonium ointment (ʒi.) may be used instead of the tobacco poultice. According to Keyes, the tobacco poultice is more serviceable than any other agent. Ice is not good. In extreme pain, when the cord has become strangulated, ten to fifteen leeches above the groin will often calm the pain as by magic. When pain is caused by extreme distention of the tunica vaginalis with fluid, puncture it, and let out the fluid. Patients should stay in bed about one week in mild cases, and ten to twelve days in worst cases. Tonics and cod-liver oil do good (Keyes).

EPISPADIAS.

Is a fissure of the superior wall of the urethra, with ectopia of the canal. It is very rare. The urethral opening may be upon the glans, or anywhere along the top of the penis, as far back as its root. When the membranous and prostatic urethra are involved, there is also exstrophy of the bladder. Epispadias is an arrest of development in the upper wall of the urethra.

Treatment.—A cure cannot be promised from operative procedure. Operations which have been undertaken very often fail, erections and contact of urine, with smallness of flaps, being the chief causes. A proper urinal is the best treatment.

EPITHELIOMA.

Is a form of cutaneous cancer. These tumors affect the skin or mucous membrane, and never originate in any other tissue. They infiltrate the parts with which they come in contact, and do not, as innocent tumors, simply separate them. They are the common forms of cancer found in the lips, tongue, œsophagus, rectum, scrotum, penis, clitoris, os uteri, vulva, etc. As a local disease, epithelioma may progress slowly for years, and cause little pain, and five, six, or even fifteen years may elapse before advice is sought. The surface of an epithelial cancer may be dry and warty, or ulcerating; when ulcerating the discharge will be a thin or creamy fluid (Bryant).

Treatment.—These cancers should always be removed; and the sooner this is accomplished, the better the prospects of a cure.

ERUCTATIONS. (Offensive).

Patients are sometimes greatly annoyed by eructations of an offensive gas, with the odor and flavor of rotten eggs—a gas consisting largely of sulphuretted hydrogen. In such cases the urine is loaded with oxalic acid, and to correct the oxaluria on which the eructations depend, the mineral acids should be given in the proper doses (Ringer).

ENTERALGIA. (See Colic.)**EPHIDROSIS.**

Called also hyperidrosis, is an augmented sudoriparous secretion.

Causes.—It may accompany any disease, and especially phthisis, as the result of debility. It may occur from excitement of the body or mind. In some cases there is no apparent cause. The perspiration may be general or local. It is sometimes limited to one side of the body or face, when it is supposed to result from faulty innervation of the sympathetic. The sweating is often limited to the soles, palms, axillæ, groins and genital organs. The hands are moist, clammy and cold from rapid evaporation of the sweat. In the feet, the secretion is confined by the stockings and shoes, and is apt to inflame the soles, leaving them very tender, so that walking or standing is painful. A species of bacteria which grows and multiplies in this sweat is the source of the offensive odor (Anderson).

Treatment. For the general sweating from wasting diseases, tonics, such as quinine, the mineral acids, strychnia and arsenic are recommended. Atropia in doses of $\frac{1}{16}$ gr. is the most powerful of all remedies for general sweating. Some benefit may come from sponging the body with vinegar and cold water. For the local sweating, Dr. Thin advises the changing of the stockings twice daily. Dr. Marten advises washing the feet night and morning with soap and water, and sponging with the following lotion:

R Plumbi acetatis ʒj
 Aceti destillati. ʒj.
 Spiritus vini methylati..... ʒij.
 Aquæ..... ad ʒxvj —M.

Dr. Simonton recommends the use of finely pulverized alum. The feet and socks are thoroughly dusted with the powder. Repeat this process every two or three days, and the feet will become hardened. In mild forms, tannic acid ʒj. to ʒvj. of alcohol may be rubbed on several times daily. Dust the feet thoroughly with pulverized salicylic acid before putting on the

stockings, and wash them with permanganate of potassium (gr. xxx.—Oj.) evening and morning and apply belladonna liniment before going to bed to the feet.

FETOR OF AXILLÆ, BREATH AND FEET.

These are very annoying conditions and the physician is often consulted concerning them. Permanganate of potassium is an elegant toilet preparation for destroying the odor of a foul breath, the smell of the axillæ, and the feter of the sweat of the feet, and may be used as follows:

R Potassii permanganatis.....gr. x.-xxx.
Aque.....℥viij.—M.

Sig.: Apply locally frequently. —Bartholow.

The following formulæ may be used for the above conditions:

R Sodii bicarbonatis.....℥ij.
Aque.....℥viij.—M.

Sig.: Apply as a lotion frequently. —Bartholow.

R Atropiæ sulphatis.....gr. iv.-viiij.
Aque rosæ.....℥ij.—M.

Sig.: Apply to the part with a brush. —Bartholow.

R Acidi salicylici.....gr. xlv.
Pulv. anyli.....℥v.
Pulv. talc.....℥xxij.—M.

Sig.: Dust over feet.

R Sodii biboratis.....gr. xv.
Thymoli.....gr. viiss.
Aque destillatæ.....℥xij.—M.

Ft. sol.

Sig.: A mouth wash. (For feter of breath). —Magitot.

FEVERS. (Classification of.)

Fevers are distinguished as essential and symptomatic. A symptomatic fever is one which is secondary to some local affection, such as an acute inflammation.

An essential fever is one which is not secondary or symptomatic, but is primary or idiopathic.

The essential fevers are as follows:

I. Febricula, a form of fever characterized by its short duration and mildness.

II. Continued Fevers, which are distinguished by the unbroken continuity of the febrile phenomena, such as typhoid, typhus, relapsing and erysipelatous fevers.

III. Periodical Fevers, which are distinguished by the occurrence of distinct paroxysms of the febrile phenomena, such as intermittent, remittent, typho-malarial and yellow fevers and dengue.

IV. Eruptive, or exanthematous fevers, in which an eruption on the surface of the body is a prominent feature, as in small-pox, scarlet fever, measles, roseola and typhus.

When the decline of a fever is rapid, occupying only a few hours, or a day or two, the fever is said to terminate by crisis. When the decline is protracted the termination is by lysis. (Each of the above fevers will be considered in its proper place.)

Causes of Essential Fevers.—Micro-organisms are among the most important of fever-exciting agents, and are probably involved in the causation of all the essential fevers. Animal heat is the result of chemical processes, especially processes of oxidation, which are constantly going on within the body; but it is not known in what way the abnormal elevation of temperature is produced in fever (Flint).

FISSURE OF THE ANUS.

Produces more misery than any other local disease, and renders the natural act of defecation an agonizing one.

Causes.—It is usually caused by the mechanical splitting of the orifice of the anus, from the passage of a large or indurated motion. It may be due to scratching the parts when highly irritable. Constipation, high feeding, sedentary habits, and want of local cleanliness are the common causes.

Symptoms.—There is pain during the passage of the motion. The motion may be streaked with a line of pus or blood. There is an unnatural contraction of the sphincter, and great pain is caused by attempting to introduce the finger. A careful examination will often reveal the presence of an ulcer on the verge of

or within the sphincter. Simple fissures are often associated with piles (Bryant).

Treatment.—Happily for patients, the treatment of the disease is as successful as it is simple. Simple fissures are readily treated by the administration of a laxative, the local application of nitrate of silver, or of lead lotion mixed with the extract of opium, and local cleanliness.

When the parts are indolent, black wash may be used, or calomel dusted over the part.

When an ulcer has existed for some time and has a hard base, the most efficient means of cure is division of the base of the ulcer with the superficial fibres of the sphincter, or forcible dilatation of the sphincter, and its laceration with the thumbs in the rectum.

After-Treatment.—The bowels must be kept slightly loose, and for this purpose the following may be used:

℞ Olei olivæ.....ʒj.
Potassii carbonatis.....gr. xlv.
Aquæ Menthæ piperitæ.....ʒviij.—M.

Sig.: One ounce three times daily.

PRESCRIPTIONS FOR FISSURE OF ANUS.

℞ Iodoformi.....
Acidi tannici.....aa.....ʒj.—M.

Sig.: Unfold or open the fissure, and fill with and dust over the powder. —Bartholow.

℞ Potassii bromidi.....ʒiss.
Glycerinæ.....ʒj.—M.

Sig.: Apply with a brush locally. —Ringer.

℞ Acidi tannici.....ʒj.
Glycerinæ.....ʒij.—M.

Sig.: Introduce into the rectum night and morning on a tent. —Waring.

℞ Extracti hydrastis fluidi.....ʒj

Sig.: Apply to the fissure. —Bartholow.

FISSURES OF THE NIPPLE.

Are excruciatingly painful, and are capable of exciting even a high degree of fever. They occur with greatest frequency in nipples which have been flattened by the pressure of corsets (Lusk).

Treatment. The nipple should be kept clean, and all irritating matter removed. When one nipple only is affected, the child need only be applied to the sound side. The healing process may be promoted by lead-lotions, by a solution of tannin, or by some astringent ointment. Keep upon the nipple a rag wetted with Goulard's extract, a teaspoonful to a tumbler of water. If the child be troubled with sprue, its mouth and the nipples of the mother must be washed with a solution of boracic acid.

PRESCRIPTIONS FOR FISSURE OF THE NIPPLES.

R Cocaini muriatis gr. x.
Aque destillata ʒij.—M.

Sig.: Apply with a brush to the fissure half an hour before nursing, and wash well with warm water just before nursing.

—L. Starr.

R Plumbi nitratis gr. iv-x.
Glycerina ʒj.—M.

Sig.: Apply after nursing, and wash the nipple carefully before the next nursing.

—Bartholow.

R Acidi carbolici gr. xxiv.
Aque ʒj.—M.

Ft. lotio.

— Apply several times daily to the nipples.

—Parvin.

R Acidi boracici gr. xx.
Menthae acacae ʒj.—M.

Use a nipple shield, and, after nursing, dry the nipple well with cotton and apply the lotion with a camel's hair brush.

Touch the fissure with a point of nitrate silver every day.

—Starr.

R Benzoini composita ʒss.
Oleum ʒss.—M.

Apply to affected parts.

—Stille.

FISTULA.

Is an unnatural communication between a normal cavity or canal and the outside of the body or with a second body or canal. According to their situation, they are named vesico-vaginal, and recto-vaginal in women, and recto-vesical in men, gastric, biliary, fæcal, anal, salivary and urinary fistulæ.

Causes.—They may be congenital or acquired. The acquired fistulæ are either due primarily to some suppurative or ulcerative process or to mechanical violence, operative or otherwise, and subsequently to a want of repair. The fistula may be a short or a long narrow tract. When the fistula is of recent origin, the walls will be soft; when old, hard (Bryant).

Treatment.—In a general way, it may be asserted that so long as the cause of a fistula exists repair cannot go on; so that in urinary fistula, when stricture is the cause, the stricture must be treated before the fistula. When the cause of the fistula has been cured or removed, then the fistula itself may be treated, and various are the means that can be employed for the same. Vaginal and rectal fistulæ usually require plastic operations. The whole margin of the fistula must be pared with nicety and accuracy, and the raw surfaces brought into apposition. The constitutional treatment resolves itself into tonics, good food and fresh air.

PRESCRIPTIONS FOR FISTULÆ.

- | | | | |
|----------|---|-------------|-----------------|
| R | Cupri sulphatis..... | gr. ii.-iv. | |
| | Aquæ..... | ℥iv.—M. | |
| Sig.: | Inject once a day. | | —Sir A. Cooper. |
| R | Argenti nitratis..... | gr. ij. | |
| | Aquæ destillatæ..... | ℥viiij.—M. | |
| Sig.: | Inject once a day. (Fistula in ano.) | | —Druitt. |
| R | Tincturæ iodini | ℥j. | |
| Sig.: | Inject once daily. | | —Waring. |
| R | Extracti sanguinarie fluidi..... | ℥ij. | |
| Sig.: | Inject a sufficient quantity to fill and distend the fistula. | | —Phillips. |

FLATULENCE.

The gas in the intestinal canal may be merely air which is swallowed; or it may result from fermentation or decomposition of food. It causes a disgust for eating, a feeling of distention, and sometimes actual pain, shortened breathing, palpitation of the heart, eructation or belching of gas with or without an odor (DuCosta).

Treatment.—According to Wood, the remedy most effective to remove and permanently cure a disposition to the accumulation of flatus in the bowels is an infusion made with half an ounce of calumba, half an ounce of ginger, a drachm of senna, and a pint of boiling water, and given in the dose of a wine-glassful three times a day.

PRESCRIPTIONS FOR FLATULENCE.

- R** Aquæ camphoræ..... $\bar{5}$ ij.
Tincture lavandule comp..... $\bar{3}$ j —M.
Sig.: A tablespoonful every hour or two. (For hysterical flatulence and flatulent colic occurring at climacteric) —Bartholow.
- R** Spiritus chloroformi.....
Tincture cardamoni comp.....aa. $\bar{3}$ ij.
Sig.: A teaspoonful every half hour in water. —Bartholow
- R** Misture asafetide..... $\bar{3}$ ij.
Sig.: A teaspoonful when necessary. (For the flatulent colic of infants.) —Bartholow.
- R** Spiritus ætheris compositi..... $\bar{3}$ ij.
Aquæ camphoræ..... $\bar{3}$ ij.—M.
Sig : Two teaspoonfuls to expel flatus from stomach.
—Bartholow.
- R** Spiritus ætheris comp.....
Tincture ammonii valerian. aa. $\bar{5}$ j —M.
Sig : A teaspoonful in water every fifteen minutes until relieved. (For hysterical flatulence and globus hystericus)
—Bartholow.
- R** Olei terebinthinæ..... $\bar{3}$ j.
Sig.: Three to five drops on a lump of sugar. Bartholow.

FRECKLES.

Called also lentigo, is the most circumscribed form of pigmentation, and the deformity to which in well marked cases it gives rise, is so well known as to require no description. It is most apt to appear in persons with delicate skins, and in those who have fair complexions, but above all in red-haired people. It is always aggravated by exposure to the sun, hence it is met with on the face, neck and hands more particularly, and is most pronounced during the summer months.

Treatment.—Avoid unnecessary exposure to the sun. According to Bartholow the following lotion is useful in freckles, sunburn and tan :

R Potassii carbonatis.....ʒiij.
Sodii chloridi.....ʒij.
Aquæ rosæ.....ʒviij.
Aquæ aurantii flor.....ʒij.—M.

Sig.: Apply to part.

R Liquoris potassæ.....ʒj.
Aquæ rosæ... ..ʒij.—M.
Ft. lotio.

Sig.: Face-wash. (In tan and freckles.) —Todd.

R Hydrargyri chloridi corrgr. j.
Zinci oxidi.....ʒij.
Zinci carbonatisʒss.
Glycerinæʒij.
Aquæ rosæ.....ʒviij.—M.

Ft. lotio.

Sig.: Apply with a sponge. (In freckles and sunburn).— Fox.

R Lactis recentis.....ʒxiiss.
Glycerinæ.....ʒviiss.
Acidi hydrochloriciʒ℥Lxxv
Ammonii muriatisʒj.—M.

Ft. lotio.

Sig.: Apply morning and evening with camel's hair brush.
(In tan and freckles). —Monin.

FROST-BITE.

When concentrated cold is applied for a period sufficient to arrest the circulation in a part, a frost-bite is the result. The first effect of cold upon a part is a sense of numbness and weight and a feeling of tingling. If the cold continue, the part will become stiff and at last insensible, feeling dead. The frozen part is white and waxy. The constitutional effects of cold are at first stimulating, and subsequently depressing.

Treatment. Sudden alteration of temperature is most injurious. The aim of the surgeon should be to recall the affected parts gradually to their normal condition by gentle friction in the course of the veins with furs or flannels. Stimulants should be administered internally. Friction with snow or ice-water is most useful. On reaction the parts may be raised, and warm milk with a little brandy given. Should reaction be too severe, it must be checked by lead or spirit lotions.

When gangrene follows, carbolic acid and oil are probably the best applications.

If a whole foot be frozen, amputation may be called for, the surgeon always waiting until the line of demarcation is formed.

PRESCRIPTIONS FOR FROST-BITE.

R Acidi carbolici $\mathfrak{z}\text{j}$
Tinct. iodinii..... $\mathfrak{z}\text{ij}$.
Acidi tanici..... $\mathfrak{z}\text{ij}$.
Cerati simplicis $\mathfrak{z}\text{iv}$.—M.

Ft. ungt.

Sig.: Apply locally.

—Bartholow.

R Linimenti camphoræ
Linimenti saponis comp.....
Olei cajuputi.....aa..... $\mathfrak{z}\text{j}$.—M.

Ft. linimentum.

Sig.: Apply to the unbroken skin.

—Brande.

R Camphoræ $\mathfrak{z}\text{j}$.
Olei cajuput $\mathfrak{z}\text{ij}$.
Ætheris $\mathfrak{z}\text{j}$.—M.

Ft. linimentum.

Sig.: Apply locally to the unbroken skin.

—Tortual.

FURUNCLE. (See Boil.)

FALLING SICKNESS. (See Epilepsy.)

FITS. (See Convulsions.)

FLOODING. (See Menorrhagia.)

FELON.

Called also paronychia, or whitlow, is an abscess of the thumb or fingers. The superficial whitlow or felon consists of inflammation of the surface of the skin of the last phalanx. It is generally seated immediately around and beneath the nail. It is attended with great pain and throbbing, and suppuration at the root of the nail, which may come off.

The deep-seated variety is attended with a severe throbbing pain, great tenderness, tense and resisting swelling, and great constitutional disturbance. The inflammation usually begins in or beneath the periosteum. It may lead to suppuration, and leave the fingers stiff and useless.

Treatment.—If purgatives and fomentations do not speedily bring relief, the finger must be freely laid open. The knife should be carried deep enough to feel the resistance of the bone or tendon. A strong solution of nitrate of silver in nitric ether applied over the part may abort the affection, if at the beginning (Bartholow).

FAINTINGS.

Treatment.—In the threatened fainting, it is a good plan to direct the patient, whilst sitting down, to lean forward, and place the head between the legs as low down as possible, so that the blood may gravitate to the brain. Brandy or wine are the best remedies, when the heart is suddenly enfeebled from fright, loss of blood, accidents or other causes. Salts of ammonium, applied to the nose, and breathed into the air-passages, are commonly used in fainting. Cold water smartly sprinkled on the face of a swooning person is a familiar way of restoring consciousness (Ringer).

FATIGUE.

Treatment.—The sitz-bath greatly relieves fatigue and soothes an irritable, restless state of the nervous system. A pedestrian, after great exertion and fatigue, will find it an agreeable restorative, preventing stiffness and aching muscles, to strip and wrap himself in a dripping wet cold sheet, well rubbing himself afterwards; but if stiffness still remains, a few drops of tincture of arnica taken internally will remove it. Tea and coffee are especially useful in a fatigued state of the system, and under ordinary circumstances are preferable in this respect to alcoholic drinks (Ringer).

FLUSHING HEATS.

The distressing symptoms occurring during the "change of life" are very various. There are heats and flushings, followed by free perspiration, and prostration is sometimes extreme. These symptoms will generally give way to bromide of potassium. Eucalyptol is given in the various symptoms connected with the change of life, as flatulence, palpitation and flushings. A woman, from the sudden arrest of menstruation, or through depraved health, or nervous depression, or more frequently at the "change of life," suffers from frequent attacks of flushings or heats, starting from various parts, as the face, epigastrium, etc., and thence spreading over the greater part of the body. These heats may last a few minutes only, or an hour or more, and may be repeated many times a day. The least exertion or excitement may bring on these heats, and such a patient generally complains of cold feet, and sometimes of cold hands. The flushings are occasionally abruptly limited, reaching to the thighs, knees or elbows, and while all the parts above these feel burning hot, the parts below feel icy cold. In many of these cases palpitation or flutterings at the heart occur on the slightest excitement.

Nitrite of amyl will prevent or greatly lessen these flushings or heats, and should be given in doses of a tenth to a sixth of a minim, in thirty times its volume of rectified spirit, every

three hours, with an additional dose as soon as the flush begins. Both men and women, but chiefly women about forty or fifty years of age, are apt to complain of a sensation of great weight and heat on the top of the head, with frequent flushings of the face, suffusion of the eyes, hot and cold perspirations, and sometimes shooting pains passing up the back of the head. In these cases, a drop of laudanum, with two of the tincture of nuxvomica, repeated three or four times a day, will give great relief. Valerianate of zinc, given in three to five grain doses in a coated pill, will usually remove the flushings of the face, hot and cold perspirations, fluttering at the heart, and heat, and weight on top of the head (Ringer).

FRACTURES.

A fracture is a solution of continuity of bone, while dislocation is a solution of contiguity.

Kinds. -1. Complete. 2. Incomplete. 3. Epiphyseal separation. A complete fracture is where division completely traverses the thickness of the bone. An incomplete fracture is where division does not completely traverse the thickness of the bone. The epiphyseal is where the epiphysis becomes separated from the bone or diaphesis.

Complete fractures may be of the following kinds: 1. Simple. 2. Compound. 3. Comminuted. 4. Complicated. 5. Impacted. 6. Multiple. 7. Gunshot.

1. Simple is where the bone is broken in one place only, and with no communication with the external air. 2. Compound is where there is communication with the external air. 3. Comminuted is where there are a great many small pieces of bone. 4. Complicated is where the fracture is associated with the main vessels, nerves, veins, or some internal organs. 5. Impacted is where compact tissue is driven into the cancellous tissue. 6. Multiple is where the bone is broken into several pieces. 7. Gunshot is where the fracture is the result of the explosion of fire-arms. Any fracture may be oblique, transverse, longitudinal or dentated. Incomplete fractures are the following: 1. Greenstick. 2. Partial. 3. Fissured. 4. Punctured. 5. Stellate. 6.

Spiral. 7. Gunshot. Epiphyseal separations occur in early life, under twenty years. The causes, symptoms and treatment are the same as fractures. Most fractures occur between the ages of twenty five and sixty. More common in men than in women. More occur in winter than in summer. The clavicle and radius are more often broken than any other bones.

Symptoms. 1. False point of motion. 2. Rotary displacement. 3. Angular deviation from the normal axis. 4. Crepitus. 5. Tenderness on pressure. 6. Unnatural mobility. 7. Retraction of muscles. 8. Ecchymosis and swelling. 9. Shortening. Crepitus is the most important sign, but may be absent sometimes, because of something between the fragments.

General Management. Give every fracture proper and diligent attention. When called to see a case: 1. Do not move the patient to a vehicle and do not set him upright. 2. Put on a temporary splint at once and carry home in a horizontal position. 3. Put patient on a hard mattress and not on a feather bed. 4. Cut off the trousers, boot and shoe, and do not pull them off. 5. Inspect the fracture, have a good assistant to make strong extension of the limb in the long axis, and then he may raise the limb. You may then inspect it to a better advantage. 6. Make extension. Get the great toe in a line with the inner margin of the inner malleolus and patella and then have the foot at right angles with the limb. Give a hypodermic injection of morphine to relax muscles. You may divide every tendon in case you can not keep the muscles from contracting.

Diagnosis. Three signs are sure: 1. Mobility. 2. Crepitus. 3. Displacement. In cases of doubt, give an anæsthetic. Treat any injury as you would a fracture when there is doubt as to what it is. (For the treatment of special fractures, see works on surgery.)

GALACTORRHEA.

Is a constant dribbling of milk from the nipple. It is an affection which may continue long after lactation has been suspended. It acts like any other profuse discharge in exhausting the strength and producing a wasting of the tissues.

Treatment. Consists in interrupting lactation, in compression of the breasts with bandages, and tonics to repair the general health. Of special measures, saline laxatives and the internal administration of iodide of potassium are of most repute (Lusk).

PRESCRIPTIONS FOR GALACTORRHOEA.

R Olei camphorati. ℥vj.
Sig.: Apply externally to breasts. —Waring.

R Potassii iodidi. ℥j.
Aque. ℥j. —M.
Sig.: Twenty-five to thirty drops in water, once or twice daily.
—Roussell.

R Atropina sulphatis gr. iv.
Aqua rose. ℥j. —M.
Sig.: Apply on lint around the breasts, and remove when the throat becomes dry. —Bartholow.

GALL-STONES. (See Biliary Calculi.)

GANGRENE.

Called also mortification, is the death of any part of the body in consequence of disease or injury. It is divided into acute and chronic. The acute is known as moist gangrene. The chronic, as dry or senile gangrene.

Causes. Predisposing and exciting. The predisposing causes are: Defective nervous power, as in palsied limbs, or division of large nerve trunks; general debility from poor food and improper nourishment; use of alcoholic drinks; atheromatous changes in the arteries of old people. The exciting causes are produced by whatever interferes with or arrests the circulation of a part. The arterial blood to a part may be cut off by accident, by ligature, by thrombosis or embolism of the arteries. The circulation through a part may be obstructed by the growth of a tumor or by the formation of bed-sores. Extreme weakness of the heart's action may produce gangrene, or whatever destroys the cells of a part, as injuries, chemical agents, prolonged use of mercury or excessive heat or cold (Bryant).

Symptoms.—Are local and constitutional. Locally, at the beginning, the pain and tenderness of the part become most acute; it is of a severe, burning character; the discoloration is of a vivid-red color; the local heat is increased. The constitutional symptoms are of a low typhoid cast. There is a profuse perspiration. When the part is dead, the pain and tenderness cease; it becomes cold, the bright redness disappears, and large blisters form which burst and leave a greenish discoloration beneath. The limb becomes greatly swollen, soft and boggy; a sickening fetid smell is exhaled. When the progress of the disease is arrested, the line of demarcation forms which separates the living from the dead tissue.

Treatment.—To avert the threatened gangrene the patient, if young and robust, with a full hard pulse, should be purged. If there is a great deal of inflammation, incisions should be made into the part, and lead water with laudanum applied. The timely use of a blister over the entire surface will sometimes bring about healthy action, and set aside the tendency to gangrene. Iron, quinine, strychnine, stimulants and nutritious diet should be prescribed. The limb should be put in an aseptic condition by washing it with 10% solution of corrosive sublimate, and then applying cotton wool and a bandage. It should be elevated and at rest. To allay fœtor, permanganate of potassium, carbolic acid and the chlorides must be resorted to. Cleanliness and thorough ventilation of the apartments must be insisted upon (Bryant).

CHRONIC, DRY OR SENILE GANGRENE.

Causes.—Diseased state of the arteries, weak heart and consequent feeble circulation may cause it. In many cases it begins without any apparent exciting cause. In old people, diabetes is a fertile cause of gangrene of the toes and feet.

Symptoms.—There will be a sensation of weight in the part, with coldness, numbness, itching and tingling of the feet, and cramps of the calves are complained of. On examination, a small dark or purplish spot will be found on the inside of one of the toes, not larger than a mustard seed. This is followed by a vesicle which exposes a black surface on bursting. This grad-

ually spreads until the whole foot is involved. It may begin on several toes at the same time, or it may show itself on the instep or heel. The part destroyed becomes black, dry, withered, cold and insensible.

Treatment.—As soon as the line of demarcation forms between the dead and living tissue, the health of the patient improves. Tonics with stimulants should be given early. Locally cotton wool in thick layers around the foot and limb must be used.

Question of Amputation.—If the gangrene is the result of a severe injury, and it is rapidly spreading, or if it arises from a wound or ligature of an artery, the rule is to amputate at once. In the above cases, do not wait for the line of demarcation to form.

In chronic gangrene, due to diabetes, or ergotism, wait for the line of demarcation to form. In cases of frost-bite, or burn, or disease of the arteries, wait for the line of demarcation (Bryant).

PRESCRIPTIONS FOR GANGRENE.

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|-------|--|--------|---------------|
| R | Brominii | ℥j. | |
| Sig.: | Apply to the slough with a glass rod. | | —Bartholow. |
| R | Cerati resinæ comp | ℥j. | |
| | Extracti opii aquos | ℥j. | |
| | Olei olivæ | ℥ij. | —M. |
| | Ft. ungt. | | |
| Sig.: | Apply locally after the slough has separated. | | —Witherstone. |
| R | Liquor hydrogenii peroxidi | ℥iv. | |
| Sig.: | Apply locally, pure or diluted. | | |
| R | Acidi nitrici | ℥j. | |
| Sig.: | Apply to the ulcer with a glass rod until it is converted into a firm, dry mass. | | —Waring. |
| R | Sodii sulphitis..... | ℥j-ij. | |
| | Aquæ | ℥x. | —M. |
| | Ft. lotio. | | |
| Sig.: | Use as a lotion, or apply on compresses. | | —Waring. |
| R | Pulv. acidi salicylici..... | ℥j. | |
| Sig.: | Use locally as a dusting powder. (To destroy fetor and change morbid action). | | —Bartholow. |

GASTRALGIA.

Is a painful state of the sensory nerves of the stomach, induced by irritation, and without fever.

Causes.—The neurotic temperament, malaria, and the abuse of tea and coffee have no little influence in causing the disease (Bartholow). Strawberries, or honey, or other ingesta, or cold may bring on an attack (Flint).

Symptoms.—Severe paroxysmal pain in the epigastrium, radiating upward over the chest and downward through the abdomen, and through to the back is the most characteristic symptom.

The pain is diminished by pressure, and the patient instinctively lies or presses firmly on the abdomen. In the severest cases the pain is excessive. The duration of the attacks may be a few hours, or a day or two, or a month with intermissions. Usually the attacks are of short duration, and terminate with eructations of gas and with vomiting. Persons of sedentary habits are more likely to be affected than those engaged in active pursuits (Bartholow).

Treatment.—During a paroxysm, the first point is the relief of pain by the hypodermic injection of morphine. The pain and also the nausea and vomiting may be arrested by creosote or carbolic acid. Equal parts of tincture of iodine and carbolic acid, of which a drop may be given every hour in a little cold water, will often stop the pain and vomiting.

The paroxysms may be relieved by one drop of Fowler's solution and two to five drops of tincture of opium. The long continued use of arsenic in a small dose—one drop ter in die of Fowler's solution—is more effective according to Bartholow's experience than any remedy mentioned.

Salicylic acid is sometimes serviceable for intermittent cases. When attacks of gastralgia are due to indigestible food, the first duty is to empty the stomach. Excellent results are often obtained from the use of muriatic acid, combined with tincture of nux vomica. The diet should be regulated. A sinapism and fomentations to the epigastrium are useful as aids. Mild cathartics may be given (Bartholow). Bismuth in doses from a scruple

to a drachm three or four times a day, has been found to be curative, according to Flint. The constant current in the hands of Leube, Beard, and Rockwell has proved efficacious. Change of habits from those of sedentary to active life is of the first importance.

Alcoholic stimulants in moderation with meals may be advised for a time (Flint).

PRESCRIPTIONS FOR GASTRALGIA.

- R Tincturæ conii3j.
Tincturæ valerianæ.....
Tincturæ opii camphoratæ
Aquæ lauro-carasi—aa.....3ij.—M.
Sig.: Seven drops in a little milk when the pain appears. —Monin.
- R Extracti cocæ fluidi.....3j.
Syrupi aurantii flor.....3v.
Aquæ.....ad.....3ij.—M.
Sig.: A teaspoonful every hour till relieved. —D'Ardenne.
- R Liq. chloroformi aq. sat.....3xv.
Aquæ aurantii flor.....3xiv.
Tincturæ anisi stellati.....3j.—M.
Sig.: A teaspoonful every quarter of an hour. —Dujardin-Beaumetz.
- R Liquoris potassii arsenitis.....3j.
Sig.: One drop in water three times daily continued for months. —Bartholow.

GASTRIC ULCER.

Causes.—Ulcer of the stomach is a comparatively common disease, and is found to exist in five per cent. of the deaths from all causes. It occurs in females oftener than in males. The liability to it is greatest between the ages of fourteen and thirty, although no age is exempt; it has been found in the new born babe and in the octogenarian. Amenorrhœa, anæmia, chlorosis, the puerperal state, prolonged lactation, and tuberculosis are predisposing causes. Ulcer of the stomach may result from an habitual stooping position, as in milliners, seamstresses and shoemakers. Burns of the chest and abdomen sometimes causes ulceration of the duodenum (Bartholow and Loomis).

Symptoms.—It is a chronic malady usually. There are three important symptoms of gastric ulcer—pain, indigestion,

and vomiting (hæmatemesis). Pain is one of its constant symptoms; at first it is dull and heavy, then it becomes burning, gnawing, and fixed, boring through from front to back, and occupying a space which the finger may cover. It usually comes on soon after the ingestion of food, and lasts during the entire period of stomach digestion; occasionally it is not present until an hour or so after eating. Very great tenderness is experienced on pressure over the vertebræ behind and the seat of pain in front. Attacks of gastralgia occasionally come on. Nausea and vomiting may accompany the pain; in some instances there is pyrosis, or "water-brash;" usually the vomiting occurs when the pain is most severe, and temporarily relieves the pain. The matter vomited consists, first of the food taken into the stomach, which has a strong acid reaction; later it is mingled with bile. Vomiting of blood is the most characteristic single symptom, but is not pathognomonic. It is absent in about one-third of the cases, and may occur only at the monthly period. Cachexia is a late symptom, the appetite is rarely impaired, sometimes it is even increased. The face, when the pain is intense, is "drawn" and haggard, which by some is regarded as characteristic of ulcer of the stomach. Obstinate constipation is the rule in ulcer of the stomach, but hemorrhage may cause diarrhœa. The blood gives to the dejections a dark color, and a tarry consistence (Bartholow and Loomis).

Differential Diagnosis.—Gastric ulcer may be mistaken for cancer of the stomach, hepatic colic, cardialgia, or gastralgia, and chronic gastric catarrh. In cancer there is usually a history of hereditary cancer. Cancer is seldom met with in persons under forty; while ulcer of the stomach occurs most in young adults, and is usually associated with anemia, chlorosis, prolonged lactation, or compression of the stomach, as in cases of shoemakers and sewing-girls. The pain in cancer is continuous, and described as lancinating; while in ulcer the pain is intermittent, greatly increased by taking food, often referred to the lower dorsal vertebræ, and described as gnawing or burning. In cancer, hæmatemesis has a sooty or coffee-ground appearance, while in ulcer it is a bright red arterial blood. Vomiting, in cancer does not relieve the pain, is not very severe, and comes on

late; but in ulcer it is severe, comes on early, and affords temporary relief from the pain. The cancerous cachexia and debility are present early and steadily progress in cancer; while in



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late; but in ulcer it is severe, comes on early, and affords temporary relief from the pain. The cancerous cachexia and debility are present early and steadily progress in cancer; while in ulcer there may be pallor, but no characteristic cachexia. The presence of an epigastric tumor establishes the diagnosis of cancer. In hepatic colic, the pain is in the region of the gall-bladder, and shoots to the right shoulder and back, comes on suddenly and suddenly ceases.

In cardialgia or gastralgia, the pain is not excited or increased by the introduction of food into the stomach, but often comes on when the stomach is empty, while in ulcer the pain is associated with ingestion of food. In cardialgia or gastralgia, pressure over the epigastrium, and the ingestion of food, relieve the pain; the reverse is the case in ulcer. Cardialgia or gastralgia is relieved by the constant current and faradization, which increases the pain of gastric ulcer. In cardialgia there will be a history of neuralgia in other parts of the body.

In chronic gastric catarrh with hemorrhage there is the history of diseases of the liver, heart, lungs or kidneys; while in gastric ulcer there is usually no such history. The pain in gastritis is not so intense as in ulcer. A coated tongue, great thirst, malaise, and pyrexia are prominent in cases of chronic gastritis, and absent in ulcer. The vomiting in chronic gastritis comes on in the morning, and the matter vomited is stringy mucus; while in ulcer the attacks of vomiting usually follow the taking of food (Bartholow and Loomis).

Prognosis.—Must be regarded as serious (Bartholow).

Treatment. Rest the stomach by keeping the patient in bed, and restricting the diet to peptonized milk—a tablespoonful to a teacupful may be given every two hours during the day and night. Digested beef-juice may also be given. All vegetables, tea, coffee, starchy foods and fruits must be prohibited. If all kinds of food are rejected, rectal alimentation must be practiced, four ounces of defibrinized blood (containing four grains of chloral to prevent its decomposition) may be thrown into the rectum every six hours (Loomis). Bartholow regards one to three drops of Fowler's solution three times daily the most important remedial agent. He also gives half-grain doses three

times a day of nitrate of silver. Fifteen grains three times daily of sub-nitrate of bismuth are effective. The flatulence may be mitigated by sulphite of soda, carbolic acid, or the alkalies. The constipation may be relieved by the saline mineral waters, or by castor-oil where the patient will bear it. After some improvement has been made, rice, soft-boiled eggs, animal broths, stale bread and cocoa may be allowed.

PRESCRIPTIONS FOR GASTRIC ULCER.

- R Creasoti.....℥iv.
 Aquæ.....℥ij.—M.
 Sig.: A tablespoonful three or four times daily. —Niemeyer.
- R Liquoris potassii arsenitis.....℥ss.
 Sig.: One drop, repeated as required to relieve the pain and vomiting. —Bartholow.
- R Skimmed milk two parts and liquor calcis one part, mixed as a steady diet. —DaCosta.
- R Bismuthi subnitratis.....℥ij.
 Pulv. opii.....gr. iij.—M.
 In pulv. no. xii. div.
 Sig.: One powder thrice daily, followed continuously by the following:
- R Argenti nitratis.....gr. v.
 Tincturæ opii.....℥iiss.
 Aquæ anisi.....ad.....℥iiss.—M.
 Sig.: A teaspoonful thrice daily with rest to the stomach. —W. H. Thomson.

GLANDS. (Enlarged Lymphatic.)

Chronic glandular enlargement is a very common affection. It is found in the strumous and feeble child as a chronic and slightly painful enlargement of a gland or glands, more particularly those beneath the jaw and about the neck.

At times these glands suppurate and leave ugly sores.

Treatment.—For the ordinary or strumous enlargement of the glands in children there is no drug equal to cod-liver oil, the syrup of the phosphate, or of the iodide of iron, or the tincture of quinine. Good food and fresh air are also essential points in the treatment of these cases (Bryant).

PRESCRIPTIONS FOR ENLARGED GLANDS.

- R Potassii iodidi.....ʒj.-iv.
 Syrupi aurantii cort.....ʒj.
 Aquæ cinnamomii.....ad.....ʒiij.—M.
 Sig.: A teaspoonful in water three times daily. —Ringer.
- R Calcii sulphidi.....gr. vj.
 In pil. no. xxiv. div.
 Sig.: One pill every four to six hours. —Ringer.
- R Syrupi ferri iodidi.....ʒj.
 Sig.: Five to forty minims, according to age, well diluted, after meals. —Bartholow.
- R Ungt. plumbi iodidi.....ʒj.
 Sig.: Apply to gland. —Bartholow.
- R Ungt. iodi comp.....ʒj.
 Sig.: Apply to gland. —H. B. Sands.

GLEET.

Is a muco-purulent discharge from the urethra, the chronic stage of gonorrhœa. In gleet, a certain amount of sticky bluish fluid, often only a drop at the meatus in the morning—continues to be secreted after gonorrhœa, from altered patches of the urethra, or coming from the congested membrane behind a stricture. Gleet, then, is a symptom of two structural lesions, and signifies that there are patches of congestion in the canal, covered or not by granulations, or that stricture exists, and that the discharge comes from behind it. Prostatic congestion and enlargement are also liable to be attended by a slight gleet.

Gleet tends to last indefinitely, and an individual so affected is a ripe subject for bastard gonorrhœa. The simple congested patches which furnish the gleety discharge, are kept from getting well by alcohol, malt liquors, sexual excesses, fatigue, violent exercise, anæmia, gouty or strumous habit. Gleet is contagious when purulent, but only if it contains gonococci. All urethral discharges become gleety before they cease (Keyes).

Treatment.—Everything earthly has an end, even a gleet, as Thiry has sagely remarked, and no treatment will succeed where over-treatment has only served to keep up the evil. As stricture

already present or forming is the most common of all causes for continued gleet, it should be sought for and treated. Where no lesion is discovered, the urine must be kept mildly alkaline, sexual intercourse avoided, and copabia or oil of sandal-wood or cubebs may be given. Stimulating or astringent injections should be employed, such as follows:

	R	Zinci chloridi.....	gr. j.
		Aquæ	℥j.—M.
Or,	R	Cupri sulphatis.....	gr. j.
		Aquæ	℥j.—M.
Or,	R	Ferri persulphatis.....	℥ss.
		Aquæ	℥vj.—M.
Or,	R	Zinci sulphatis.....	gr. i-iiij.
		Liquoris plumbi subacetatis..dil...	℥j.—M.
Or,	R	Aluminis exust.....	gr. x.
		Aquæ	℥j.—M.
Or,	R	Acidi tannici.....	gr. v-x.
		Aquæ	℥j.—M.
Or,	R	Zinci permanganatis.....	gr. ss-ij.
		Aquæ	℥j.—M.
Or,	R	Hydrargyri chloridi corrosi.....	gr. ss.
		Aquæ.....	℥xij.—M.

Alcohol is often efficient, and may be used as follows: To commence with two parts of rose water to one of red wine, and continue increasing the latter until pure wine can be used. Glycerine may be combined with any of the above formulæ.

Three points must be remembered in regard to injections: 1. They must not be too strong. 2. They must be continued for at least ten days after the discharge ceases. 3. They may produce a hypersecretion of the urethral mucus, and thus keep up the discharge. Any injection, thrown too deeply into the canal, may light up epididymitis, or cystitis.

Deep urethral injections may be used, if the discharge comes from the membranous urethra. Locate the granulating area with a bulb, and there deposit three minims of a solution

of nitrate of silver of a strength of gr. i. to grs. xx. to the ounce of water. Repeat the application three times a week.

Occasionally a fifty per cent solution in water of the glycerole of tannin will arrest a deep urethral discharge after the nitrate of silver fails. Sometimes the passage of a well-oiled smoothly-polished sound as large as the meatus will admit, repeated every third day will cure the discharge (Keyes).

PRESCRIPTIONS FOR GLEET.

R	Potassii permanganatis	gr. i iij.	
	Aquæ destillatæ.....	3j.—M.	
Sig.:	Use as injection.		—Keyes.
R	Zinci sulphatis.....	gr. vj.	
	Tinct. opii	3j.	
	Tinct. catechu.....	3ij.	
	Aquæ rosæ.....ad.....	3ij.—M.	
Sig.:	Use as an injection three times a day.		—Witherstone.

GOITRE. (Simple and Exophthalmic).

Simple goitre, or Derbyshire neck, as it is generally known in England, is very common. In its most usual form it appears as a simple bronchocele, or hypertrophy of the thyroid gland. They may press upon surrounding parts and cause dyspnœa, cough, and difficult deglutition. All these tumors rise and fall with the larynx in deglutition (Bryant).

Cause.—In the Derbyshire district it is generally believed that it is from the water impregnated with chalk, lime, and magnesia, that the disease is produced (Bryant).

Treatment.—Simple goitres are to be treated on ordinary principles by tonics, fresh air, etc. The air of the room should be kept iodized by means of solid iodine put into a box with a perforated lid. Bryant has seen goitres rapidly disappear under this treatment. With the above treatment he, at times, rubs in an ointment of the iodide of ammonium, a drachm to an ounce. To paint a goitre with the tincture of iodine is useless. Dr. Mouat of Bengal, spoke very highly of an ointment of the biniodide of mercury (three drachms to a pound of lard) rubbed in for

ten minutes in the sunshine. He gives his cases of recovery by the thousands. Of late years, Bryant injects 20 or 30 drops of a mixture of equal parts of tincture of iodine and alcohol, with success. In some cases, he reports a cure with one injection.

Exophthalmic Goitre is a disease characterized by exophthalmus (protrusion of the eyeballs), enlarged thyroid, dilatation of the arteries, palpitation of the heart, and anæmia. In Germany it is known as Basedow's disease; in England as Graves' disease.

Causes.—Bartholow gives moral emotions, fright, chagrin, reverses of fortune and a peculiar condition of the nervous system as causes. DaCosta says, "This disease is most commonly observed in females, and connected with hysteria, neuralgia, and uterine disturbance, and is considered to be due to an affection of the cervical sympathetic nerve." According to Loomis the enlargement of the thyroid body is due to dilatation of its vessels and protrusion of the eyeball to a dilatation of the vessels behind the globe.

Symptoms. This disease may come on suddenly or slowly. Palpitation is most often the first symptom. The heart beat is always above normal and may reach 200 per minute. A soft blowing, murmur is heard at the base and over the carotids. Sometimes the goitre is the first symptom observed. The thyroid gland occasionally enlarges in pregnancy, but this is accidental. Exophthalmus may be the first symptom. There is a staring expression. There is more or less fever followed by sweat. The patient is nervous, apprehensive, irritable and lachrymose. The patient is pale, anæmic, and amenorrhœa is present in most cases (Bartholow and Loomis).

Prognosis. Must always be guarded (Loomis).

Treatment.—Traube achieved great success with five grains of quinine one day, and ten grains of iron, in the form of Vallet's mass, the following day. Good results have been obtained from belladonna and ergot. Bartholow has found galvanization of the cervical-sympathetic and the pneumogastric, by placing the anode under the ear, and the cathode at the epigastrium to be of the highest efficiency.

PRESCRIPTIONS FOR GOITRE.

R Tincture iodinii comp..... \bar{z} j.

Sig.: Apply locally with a brush. Also five to fifteen minims in water three times daily internally. (In simple goitre).

—Bartholow.

R Ungt. hydrarg. iodidi rubri..... \bar{z} j.

Sig.: Rub in a piece the size of a pea and expose to the sun. (In simple goitre).

—Ringer.

R Potassii bromidi. \bar{z} ss.

In pulv. no. xii. div.

Sig.: A powder in half a tumblerful of water three times daily. (In exophthalmic goitre).

—Hutchinson.

GONORRHOEA.

Is a urethral inflammation, a strictly local affection, exerting no poisonous action upon the blood, and is the most venereal of all the venereal diseases. Urethritis signifies simply inflammation of the urethra, consequently gonorrhoea is urethritis, but urethritis may not be gonorrhoea. Gonorrhoea alone produces gonorrhoea. The term urethritis should be reserved for all inflammatory urethral discharges having another origin, and for all cases of doubt. "It is better that a hundred of the guilty should escape than that one innocent person should be accused." Experience proves beyond a doubt that urethral inflammation attended by an abundant discharge may be acquired by a healthy young lover from his equally healthy young mistress, by a young husband from his wife, and presenting nothing to differentiate it from gonorrhoea (Keyes).

Causes. Gonorrhoea is a notoriously contagious disease, and it may be acquired from any person having it, by the mere contact of the discharge with the mucous membrane of the urethra. The only mucous membranes of the body capable of taking on inflammation from the contact of gonorrhoeal pus are, the urethral, vesical, vaginal, uterine, tubal, conjunctival and rectal. A peculiar vegetable parasite, called the gonococcus, is the real cause of gonorrhoea. The three most common forms of urethral flow are urethritis, bastard gonorrhoea, and gonorrhoea. Mechanical violence, such as the rough use of instruments in the urethra,

chemical violence, such as acid urine, cantharides, strongly acid or alkaline injections, leucorrhœal discharges, lochial and the menstrual flow may be sufficient to cause urethritis in a perfectly healthy subject. In these cases the patient has a slight uneasy sensation at the meatus, a little smarting, and a pearly drop in the morning (Keyes).

BASTARD GONORRHEA.

A patient who has previously had gonorrhœa, comes with a little oozing from the meatus, perhaps with no itching sensation, nor any smarting on urination, and states that (perhaps after copious libations of ale, beer, or champagne) he sinned with a suspicious party, and that while examining himself on the following morning, found the little opaline drop. Such a person has a damaged urethra, a patch of chronic congestion, or a stricture, and he has irritated this surface and given himself a discharge. This is not true gonorrhœa; it is bastard (Keyes).

Symptoms. The period of incubation varies from a few hours to fourteen days. The first symptom in true gonorrhœa is usually noticed on the fifth to seventh day. A tickling, teasing, itchy irritation is first felt at the orifice of the urethra. A slight, bluish discharge is seen between the lips of the meatus, which swell a little and become reddened. A slight stinging is felt on urination. The quantity of the discharge increases, and it becomes opaline. Greater pain is felt in passing water. The meatus feels hot and sore. After the fifth day from its appearance the discharge becomes much more copious. It gets thick and purulent, and soon acquires a greenish color. Pain is now felt all along the pendulous portion of the urethra, and the canal is very sensitive to pressure. Pain may be complained of in the groin, testicle, perineum, cord and back. The stream of urine is small, forked, and dribbling on account of the inflammation of the urethra, and retention may come on if the patient has previously had a stricture. The prepuce may become cedematous, occasioning phimosis or paraphimosis. Erections, also, at this time become painful, threatening chordee. Chordee is most frequent during the night and toward morning. After the disease

has continued at its height for from one to three weeks, the pain on urination ceases, and the discharge becomes more watery, and finally diminishes to a drop in the morning.

The Duration of Gonorrhœa is Variable.—A well-managed case lasts from three to six weeks as a rule; but the discharge may continue for months and even years. A first gonorrhœa is the most severe, but is the most certain to get perfectly well. If the disease does not get well, it passes into the gleet stage (Keyes).

Complications.—Balanitis, phimosis, chordee, possible retention, hæmorrhage, epididymitis, orchitis, gonorrhœal cystitis, gonorrhœal rheumatism, gonorrhœal ophthalmia and gonorrhœal conjunctivitis are the most important (Keyes).

Treatment.—There are two methods of treatment, the abortive and the rational.

The Abortive Treatment.—Consists in hot irrigation to soothe the membrane and wash out the poison, and in the use of antiseptic, or antiparasitic drugs to destroy the gonococcus. Nitrate of silver and chloride of zinc do more harm than good. The present favorites are prolonged irrigation and varying strengths of the bichloride of mercury. If the abortive treatment is to be tried, it should be used within the first twenty-four hours of the commencement of an attack. The method by anterior irrigation is simply to put a quart of tepid or hot water, at a strength of half a grain of bichloride of mercury in twenty-two ounces (about 1 in 20,000), into a fountain syringe, and press the blunt glass nozzle into the urethra, so that the water shall trickle out slowly alongside of the glass nozzle. Instead of the fountain syringe a little red soft rubber irrigator, called the universal injector, may be used. This irrigation is repeated three times a day.

The Rational Method.—Consists first in observing the hygiene of gonorrhœa, which is as follows: Absolute continence until at least ten days after the entire cessation of the discharge, and avoidance of anything liable to induce sexual excitement. No alcoholic stimulants of any sort, and, above all, no malt liquor should be drunk during the treatment.

Increasing Stage.—If the case is seen early enough, mild bichloride irrigation may be tried. The bicarbonate of soda, or better still, the citrate of potash may be given in doses of gr. x-xx. during the second hour after each meal throughout the entire treatment, to keep the urine alkaline. Occasionally twenty grain doses of the bromide of potassium will moderate the ardor urinæ better than the citrate.

The following is a good combination:

R	Potassæ citratis.....	3ii.-vj.
	Bals. copaliæ	3iii.-vj.
	Extracti hyocyami fluidi	5ss.-ij.
	Syrupi acaciæ	3iss.
	Aquæ menthæ piperitæ.....	q. s. 3iij.—M.

Sig.: Shake. Teaspoonful in water.

Another aid to easy micturition is Milton's plan of immersing the penis in hot water before and during the act. A suspensory bandage should be worn. When injections are used in the increasing stage, they should be very mild ones, as follows:

	R	Liq. plumbi subacetatis dil.....	3j.
		Morphia acetatis	gr. j.—M.
Or,	R	Zinci sulphocarbolat.....	gr. i-ij.
		Aquæ.....	3j.—M.
Or,	R	Zinci sulphatis.	gr. i-ij.
		Aquæ.....	3j.—M.
(In less acute for 1 s). Or,			
	R	Zinci sulphatis.....	gr. i-ij.
		Liq. plumbi subacetatis dil.....	3j.—M.
Or,	R	Aluminis exust	gr. x.
		Aquæ	3j.—M.
Or, if more astringency is required,			
	R	Acidi tannici	gr. v.-x.
		Aquæ.....	3j.—M.

A suitable injection may be used two or three times a day.

Stationary Stage.—This stage lasts from one to three weeks with very little change. The treatment of the first stage, without any injections, must be kept up. Prolonged and frequent warm baths are beneficial in this stage. The most difficult part of the treatment of this stage is to soothe the painful erections

and keep off chordee. The best course is for the patient to keep his urine dilute and alkaline, and to immerse the penis for a long time in very hot water before retiring. He should sleep, lightly covered, on his side, on a hard bed, after a small evening meal. Bromide of potassium, in doses of from thirty to sixty grains at night in water, repeated once, if necessary, will control chordee in some cases. When a patient wakes with chordee, the penis should be plunged into the coldest water which is at hand, or laid along a piece of iron which has been exposed to the cold. He must not "break the chordee."

Decreasing Stage.—Injections are of great service in the stage of decline. Any of those already given may be used. If copaiba is well borne and properly administered, it is the most efficient of the anti-gonorrhœal internal remedies. Pills or tablets containing copaiba, sandal-wood oil, cubebs and oil of turpentine sometimes act better than any one alone. They may cause an eruption to appear (Keyes). The treatment of the complications of gonorrhœa will be found in the proper order.

PRESCRIPTIONS FOR GONORRŒHA.

- R Balsami copaibæ.
 Spiritus ætheris nitrosi.
 Spiritus lavandulæ comp, aa..... $\overline{3}$ ss.
 Liquoris potassæ..... $\overline{3}$ j.
 Mucil acaciæ, q. s., ad $\overline{5}$ iv.—M.
 Sig.: Shake, and take one teaspoonful. ("Lafayette Mixture.")
 —Charity Hospital.
- R Balsami copaibæ $\overline{3}$ ss.
 Tinct. ferri muriatis.
 Tinct. cantharidis aa..... $\overline{5}$ ij.
 Glycerinæ..... $\overline{3}$ ss.
 Syrupi.....q. s., ad..... $\overline{5}$ iv.—M
 Sig. A teaspoonful after meals. —Burnstead.
- R Potassii citratis $\overline{3}$ ss-j.
 Spiritus limonis $\overline{3}$ ss
 Syrupi simplicis $\overline{3}$ ij.
 Aquæ $\overline{3}$ j —M.
 Sig. A dessertspoonful well diluted three or four times daily,
 fasting. (In the first stage). —Keyes.

R Liq. hydrarg. chlor. corros. (℥ $\frac{1}{100}$) Oj.

Sig.: Distend the vagina with a speculum and cleanse thoroughly with the above solution. Then dust over and rub in iodoform, and tampon the vagina with iodoform gauze. Repeat in three or four days. (In female.) —Schwartz.

GOUT.

In a constitutional malady, inherited and characterized by paroxysms of severe pain in small joint—the great toe usually—due to the presence of uric acid in the blood, and the deposit of the urates in the structure of the joints and throughout the body. Gout in the foot is called podagra; in the hand chiragra; in the knee gonagra. (Bartholow.)

Causes. The gouty diathesis may be inherited or acquired. Gout is a disease of middle life. The direct exciting cause is over-eating and the use of alcohol. Of the alcoholic beverages, the sweet wines and malt liquors are considered more gouty than spirits. Lack of exercise, and failure of the excretive power of the kidney and lead-poisoning are influential factors. Men suffer from attacks of gout much more frequently than women. As a disorder of the upper classes, gout has had a position of distinction, and Sydenham consoled himself for his sufferings from gout by the reflection that it is an eminently respectable disease, by which more rich men than paupers, more wise men than fools are afflicted. It is the large consumption of beer which develops gout in the laboring classes. Attacks are sometimes attributed to prolonged intellectual exertion, anxiety of mind, bodily fatigue, and exposure to cold, and are more likely to occur in the spring and autumn than at other seasons of the year. (Bartholow, Flint and Loomis.)

Symptoms. *Acute Gout.* Usually between midnight and four or five in the morning the patient wakes with a burning, throbbing pain in the ball of the great toe, which the slightest pressure greatly intensifies. The affected joint becomes red, swollen, hot and shining; the veins are distended, and it resembles a joint about to suppurate. The temperature may in a severe attack reach 105° F. The pulse is full and bounding, but compressible. The pain in the affected joint is so great that the

patient cannot move it. He tosses about for hours, until finally, in a profuse perspiration, falls asleep. In a few hours he awakes almost free from pain, and remains so during the day; but about the same hour the next night there is a recurrence of the local pain and the fever. These nocturnal attacks continue for two or three days, then the maximum of pain is reached. At the end of a week, they have gradually subsided. Following the attack, there is a feeling of well-being. During an attack, there are anorexia, coated tongue and constipation. The urine is scanty and high-colored. The bladder is irritable, and there is a scalding sensation on urination. An individual may have only a single attack, but usually a second supervenes within a year.

Chronic Gout.—When tophi (deposits of urate of sodium) form around the joints, and they become distorted or crippled so that walking becomes difficult, it is called chronic gout. Nodules of the deposit are frequently seen on the helix of the ear, sometimes on the eyelids and occasionally on the face. When the stomach, intestine, lungs, heart, liver, kidneys and brain are gouty, it is called irregular and misplaced gout. Gout is a very chronic disease. It sometimes produces subluxation of the joints, and this combined with the tophaceous nodules give rise to striking deformities (Flint and Loomis).

Differential Diagnosis.—Gout may be mistaken for rheumatism. Gout attacks the small and rheumatism the large joints. A rheumatic attack is of longer duration than a gouty paroxysm. In gout the fever is slight, in rheumatism it is high. In acute rheumatism, the heart is frequently involved, in gout rarely. The gouty attack coming on at night in the great toe joint is in marked contrast to the onset of rheumatic fever. Acute articular rheumatism is a disease of early adult life, while gout is rare before thirty-five. In gout there is a history of high living, in rheumatism there will be a history of exposure or exhaustion. In gout there is an excess of uric acid in the blood (uricæmia), this is never the case in rheumatism, but is pathognomonic of gout. Tophaceous masses occurring in the external ear, varying in size from that of a pin's head to that of a split pea, are often of great assistance in the diagnosis (Loomis).

Treatment.—*1. General Hygiene.*—Gouty subjects should take systematic exercise in the open air, especially horse-back riding, walking, rowing, etc. A country residence, a warm, dry climate, are preferable. The patient should be warmly clad in flannel, retire and rise early, and avoid severe physical and mental strain.

2. Dietetics.—Starving will not cure gout. The principal articles of diet should be beef, mutton, chicken, bread, milk and fruits. All pastry, eggs, tea, coffee, alcohol, cheese, dried meats, tomatoes and strawberries should be avoided. Alkaline mineral waters, seltzers, vichy and lithia may be taken with and after meals.

3. External Treatment.—The affected part should be raised above the body and wrapped in flannel. When the pain is intense opium may be applied to the joint. Vapor and Turkish baths should be taken weekly.

4. Internal Treatment.—Colchicum and the alkalies are our chief remedies during the paroxysm. For thirteen centuries colchicum has been used in this disease. Loomis gives one of the following pills every three hours until the specific purgative action of the colchicum is obtained:

R Pulv. ipecac.....
 Extracti colchi acet.
 Hydrarg. protochlor (calomel)
 Ext. aloes fld..... aagr. j.
 Ext. nucis vomicae gr. i.—M.

Carbonate of potash, Rochelle salts and citrate of lithia are important adjuvants to the colchicum treatment. In chronic gout tonics, as iron, arsenic, etc., are usually demanded (Loomis).

PRESCRIPTIONS FOR GOUT.

R Magnesii sulphatis..... ʒj.
 Magnesiæ optimæ ʒij
 Vini colchici rad. ʒj.
 Aquæ menthæ pip. ʒx.—M.
 Sig.: A tablespoonful every hour until it operates. —Scudmore.
 R Tinct. iodini ʒijss.
 Glycerinæ ʒij.—M.
 Sig.: A tablespoonful thrice daily. —Granville.

R Paraldehyde.....℥ss.
 Syrupi simplicis℥iss.—M.

Sig.: A teaspoonful to a tablespoonful, well diluted when required (for gouty insomnia). —Hodgson.

R Granulated efferv. lithii citrat℥iv.

Sig.: One or two teaspoonfuls in water three times daily. —Mattison.

GUMS. (Affections of).

When the gums are spongy and ill-conditioned, and manifest a tendency to recede from the teeth, the following local application is very serviceable:

R Aluminis℥j.
 Vini.....O. j.
 Tinct. cinchonæ℥ss.
 Tinct. myrrhæ.....℥ij.
 Mel. rosæ.....℥ij.—M.

Sig.: As a mouth wash. —Bartholow.

The glycerite of tannin is a useful application for spongy and bleeding gums. When fetor is present, carbolic acid and iodoform are most serviceable. The tincture of benzoin, with or without glycerine, is very effective.

PRESCRIPTIONS FOR SPONGY OR BLEEDING GUMS.

R Chloral hydratis.....
 Tinct. cochleariæ.....aa.....℥iss.—M.

Sig.: Apply to gums, by means of a pledget of cotton every day or two. (For gingivitis of pregnancy). —Pinard.

R Tinct. myrrhæ.....℥ii.-iv.
 Aquæ vel. infusi cinchonæ℥iv.—M.

Sig.: Use as a gargle. (For spongy or ulcerated gums). —Phillips.

R Glycerite acidi tannici.....℥j.

Sig.: Apply with camel's hair brush. —Bartholow.

GASTRITIS. (Toxic.)

Is an acute inflammation of the stomach, caused by the ingestion of irritant and corrosive poisons.

Symptoms.—Besides the vomiting which occurs immediately or very soon after swallowing the irritant, corrosive or toxic substance, purging sets in and the same sloughs of the tissues discharged by vomiting pass also by stool. In the case of corrosive sublimate and the metallic salts generally there occur intense colic and tenesmus, and the discharges consist of mucus and blood and strongly simulate dysentery. Arsenic, the salts of mercury, copper, zinc and nitrate of potash, produce an intense inflammation. Sausages, hams, cheese, fish, etc., that have undergone decomposition produce, in a few minutes or hours after swallowing them a violent gastritis. There is great anxiety and depression, a weak, rapid pulse, cold skin, covered with cold sweat, intense internal heat and thirst and burning in the gullet and fauces (Bartholow).

Prognosis. Death may occur from the immediate effects of the poison. Recovery may ensue if the injury done is not too great for repairs.

Treatment. Vomiting is to be encouraged by the free use of demulcent drinks. If the toxic agent consists of an acid, as speedily as possible, weak alkalies, lime water, soda, common soap, etc., should be given. The other poisons require their proper antidotes. The stomach pump should be used not only to remove the poison remaining, but to thoroughly wash out the stomach. To allay the pain, give a hypodermic injection of morphine. Ice should be given freely and an ice-bag applied to the epigastrium. No food should be given, but a little cold milk at short intervals (Bartholow).

GINGIVITIS. (See Gums, Affections of.)

GLAUCOMA.

This term is used to express a morbid condition characterized by an increase in the hardness of the eye-ball. The word *glaucoma*, literally signifies green, and was employed because in certain advanced cases the pupil acquires a greenish hue. The standard of ocular tension varies in its physiological limits. In women it is normally less than in men, in children than in adults. An average of twelve inches of water is normal. The sense

of touch must be relied upon for the tension, and one finger of each hand is to be lightly pressed upon the eye as when feeling for fluctuation in an abscess. When the tension is increased it is called plus, when diminished minus tension (Noyes).

Varieties.—1. Glaucoma simplex. 2. Glaucoma with inflammation. 3. Glaucoma hemorrhagicum. 4. Secondary glaucoma (Noyes).

Symptoms.—The simple is the most frequent variety, is insidious and very slowly progressive, occurs most often after middle age and in hypermetropic eyes. The external appearance of the eye may be normal except a notable whiteness of the sclera. The field of vision will be restricted on the nasal side to a greater or less degree. The tension of the eye will be increased. Uncommonly strong glasses for reading will be needed. Attacks of sudden obscurity of sight for some minutes have taken place. At times colored rings will be observed around a lamp or gas flame. It is usual for one eye to be affected sometime before the other. It may occupy five to fifteen years for its development, and in old persons be mistaken for senile cataract. When the glaucoma becomes chronic there will be greatly increased hardness with the pupil widely and unequally dilated and fixed, the cornea more or less anæsthetic, the pupil will have a dusky or even greenish hue, and the globe enlarged tortuous arteries.

In the inflammatory variety, the person is apt to be taken during the night with severe pain in the eye and forehead. There may be rise of temperature, rapid pulse and vomiting. On inspection of the eye, the cornea may be hazy, the aqueous will be turbid, the iris and lens pressed toward the cornea, the pupil will be obscured and dilated, and the iris discolored, and diminished to a narrow ring. It is not easy to feel the tension through the swollen lids, and the pressure will be painful. Vision is impaired or wholly lost in a few hours.

In the hemorrhagic variety, there is effusion of blood in the retina, or optic nerve, and sometimes in the vitreous. There is a sudden loss of sight, followed by pain and inflammation.

In the secondary variety, there is increased ocular tension, due to some other disease (Noyes).

Prognosis.—The disease tends to total loss of sight.

Treatment.—The merit of having discovered that iridectomy is capable of curing glaucoma, stamps the name of Græfe with undying honor. Up to his time no remedy was known, and now no remedy, except an operation, is of positive value, and the most favorable results are gained when it is done at an early period. Acute attacks occur in chronic glaucoma, and these are controlled by combining a 4 per cent. solution of cocaine muriate with solution of eserine sulphate (gr. i. to ʒi.) Each may be put up in gelatine wafers, and put in the eye every hour. Extremely hot fomentations will give relief, and morphine may be given at night. Atropia and all mydriatics should be avoided, as they tend to aggravate the symptoms (Noyes).

GRANULAR LIDS. (See Trachoma).

GRAVES' DISEASE. (See Exophthalmic Goitre).

GRAVEL. (See Calculi Renal).

GREEN-SICKNESS. (See Chlorosis).

GUMMA. (See Syphilis).

GIDDINESS.

Treatment.—Cod-liver oil and quinine is the best treatment for giddiness in the aged, that is, when this symptom is not ascribable to serious organic brain disease, but probably to atheromatous changes in the brain vessels, or to a weak heart.

GLANDERS.

Is a contagious disease of horses, which may be transmitted to man. The nodules of glanders are most frequently found in the nose of the horse, but in this animal, as well as in man, the nodules may be found in the skin, the mucous membranes, and viscera. The nodules usually suppurate (Flint).

Treatment.—There is no drug which has any influence on the disease. Fresh air, tonics, such as quinine and iron, should be

given. When the nose or throat is the source of trouble, it should be washed with water rendered antiseptic by iodine, carbolic acid, Condy's fluid or creosote, nitrate of silver solution, tannic acid, etc. Nitro-muriatic acid lotion, and a gargle of chlorate of potash should be used in the throat (Bryant).

GLYCOSURIA. (See Diabetes Mellitus.)

GONAGRA. (See Gout.)

HÆMATEMESIS.

Is vomiting of blood. It is a symptom in a variety of diseases. Rupture of a blood vessel is one of its essential conditions.

Causes.—Injury to the mucous membrane of the stomach by traumatism or poisons, diseases of the wall of the stomach, obstruction to the portal circulation, blood-poisoning, cancer and ulcer of the stomach, stoppage of the menses in the female, and sudden arrest of hemorrhoidal discharges may cause it (Loomis).

Symptoms. If the hemorrhage is profuse, the patient has a sense of heat and distention in the epigastrium, with nausea and vomiting, becomes pale, has a cold clammy skin. If the blood is vomited in large quantities immediately after the bleeding has occurred, it will be partly fluid and partly coagulated; but if retained for a time, it will be fluid and have a black or brownish-black appearance, with an acid reaction (Loomis).

Differential Diagnosis.—Hæmatemesis may be confounded with hæmoptysis or blood-spitting. Hæmoptysis is preceded by bronchial or pulmonary symptoms, and hæmatemesis by gastric symptoms. In hæmoptysis there is a sense of constriction across the chest, with dyspnoea and cough. In hæmatemesis there is nausea, with a sense of oppression and distention in the epigastrium. In hæmoptysis, blood is coughed up in mouthfuls, bright red, frothy, alkaline and mingled with sputa. In hæmatemesis, blood is vomited more or less profusely, is dark colored, mixed with food, coagulated, and often acid. In hæmoptysis there is a sense of trickling behind the sternum, and for a few days after the hemorrhage, small blood-spittings (Loomis).

Treatment.—During the hemorrhage the patient must be kept absolutely quiet, in a horizontal position. Ice should be taken freely, and ice-bags applied to the epigastrium. Morphine and ergotin may be given hypodermically. Brandy may be given by the rectum or hypodermically. Milk is the only diet allowed for the first week (Loomis).

PRESCRIPTIONS FOR HÆMATEMESIS.

- ℞ Liquor ferri subsulphatis.....℥ss.
 Sig.: One or two drops in ice water frequently. —Bartholow.
- ℞ Ferri et ammonii sulphatis..... gr. xL.
 Aquæ cinnamomi..... ℥iv.—M.
 Sig.: A teaspoonful every two or three hours. —Hartshorne.
- ℞ Ergotin..... gr. xij.
 Aquæ destillatæ..... ℥j.—M.
 Sig.: Five to ten minims hypodermically every three hours.
 —Ringer.
- ℞ Acidi gallici..... gr. x.
 Acidi sulphurici dil..... ℥x.
 Aquæ ℥j.—M.
 Ft. haustus.
 Sig: To be repeated in four to six hours if necessary.—Bruton.
- ℞ Tincturæ hamamelis.....℥ss.
 Sig.: Two to four drops every two hours. —Ringer.
- ℞ Acidi tannici..... .℥j.
 Aquæ..... ℥j.—M.
 Sig.: A teaspoonful frequently. —Bartholow.

HÆMATURIA.

Is the passage of urine containing blood. The origin of the blood may be at any point from the meatus to the malpighian tuft. It is a symptom and not a disease.

Causes.—Active and passive hyperæmia of the kidney, acute suppurative nephritis, tuberculosis and stone in the kidney and pyelitis are causes. Turpentine, cubebs, copaiba, cantharides, etc., may cause blood in the urine. The causes in the ureter are cancer, polypi, ulcers and calculi. The causes in the bladder are cystitis, cancer, abscesses in the wall, polypi, stone, rupture,

tuberculosis, etc. The causes in the urethra are urethritis, chordee, cancer, fracture of the penis, enlarged prostate, polypi, caustic injections, chancre and chaneroids, phimosis, impacted stone, etc. The general causes of hæmaturia are acute infectious diseases, as fevers, especially malarial, scurvy and purpura. Hæmaturia is endemic in some localities, as South America and Isle of France, due to a parasite (Loomis).

Symptoms. The urine may be almost black and loaded with clots, or it may be only slightly smoky or pinkish in color. It is albuminous. The blood usually comes from the urethra, the bladder, or the kidneys. To determine the source of the blood the following rules may be observed: Urethral hemorrhages are independent of micturition, as only a residue of blood is washed out at the beginning of the flow of urine, and some of the blood will reach the meatus between the acts of micturition. Blood effused into the urethra clots there and assumes the shape of a leech, and usually comes with the first gush of urine. If the bladder is the source of the hemorrhage, the blood flows only at the time of micturition, and follows the discharge of urine. The blood does not equally diffuse through the urine, so that the first passed is clear or nearly so, but at the end of the act the urine is much more deeply colored, or pure blood, in a liquid form, or in clots is voided. There is usually pain over the bladder, with a frequent desire to pass water, and a stoppage in doing so. In renal hemorrhage, there is pain in the lumbar region, and the blood is mingled with the urine, and is commonly as profuse at the commencement as at the end of micturition. Should blood globules, albumen, casts, and blood moulded in the form of renal tubules be found in the urine, renal disease may be regarded as the cause of the hæmaturia.

Treatment. When the hæmaturia is profuse or persistent, the patient should be placed in a recumbent position, ice-bags applied over the seat of the hemorrhage, and hæmostatic remedies used, such as gallic or tannic acid, ergot, acetate of lead, and astringent ferric preparations (Loomis).

PRESCRIPTIONS FOR HÆMATURIA.

R Mucil. acaciæ.....q. s.....
 Syrupi simplicis.....℥iij.
 Olei gaultheriæ.....gtt. viij.
 Olei terebinthinæ.....℥ss.—M.

Ft. emulsio.

Sig.: One to three teaspoonfuls every three hours. —Hunter.

R Acidi gallici℥ss.
 Acidi sulphurici dil.....℥j.
 Tinct. opii deodorat.....℥j.
 Infusi digitalis.....℥iv.—M.

Sig.: A teaspoonful every four hours. —Druitt.

R Tinct. ferri muriat℥xxx.
 Tinct. digitalis.....℥xv.
 Aquæ menthæ pip.....℥iss.—M.

Ft. haustus.

Sig.: To be repeated every four hours. —Aitkem.

HÆMOPTYSIS.

Is the spitting of pure blood. The sputa are streaked with blood in bronchitis, intimately admixed with blood in pneumonia, (the rusty colored matter), yet we do not call this hæmoptysis (Loomis).

Causes.—Pulmonary congestion, pulmonary apoplexy, and inflammation of the lungs and bronchi may cause spitting of blood; but hemorrhage from the bronchial tubes is by far the most frequent cause of blood spitting or hæmoptysis. Ulceration, over distension, and weakness of the capillary walls of the bronchial mucous membrane are the chief causes of bronchial hemorrhage. Bronchial catarrh, phthisis, inhalation of irritating gases or vapors, passive hyperæmia of the lungs from obstructive heart disease, intense active hyperæmia, the violent coughing of bronchitis, pertussis, and pneumonia, and suppression of the menses may cause it. Ulceration of an exposed vessel in advanced phthisis will cause it (Loomis).

Symptoms.—All bronchial hemorrhages are attended by the spitting of bright red, frothy, arterial blood. They may come on suddenly without any warning, but usually there is a sense of

constriction at the upper portion of the chest. Cough may or may not precede the hemorrhage. Usually the patient feels as if some fluid had suddenly commenced trickling under the sternum, and he notices an unusually sweetish or saltish taste in the mouth. The blood in the throat brings on fits of coughing. Blood may be expectorated only for a few hours, or for several days. The amount varies from an ounce to a pound. The patient has an anxious expression, becomes tremulous and often faints. Hemorrhage from the lungs weakens a patient. The patient goes on coughing for a few days, expectorating small dark coagulated masses of blood, or blood-streaked sputa.

Sometimes the hemorrhage is so profuse that the blood spouts out at the mouth and nose, and this points to rupture of an aneurism (Loomis).

Differential Diagnosis. Hæmoptysis may be confounded with epistaxis, pulmonary apoplexy, hæmatemesis, and aneurisms rupturing into the air passages.

In epistaxis, the blood is always coagulated and dark-colored. It is not attended or followed by a cough, and blood can always be detected in the nostrils and posterior nares.

In hæmatemesis, the blood is black, contains no air, has an acid reaction, is mixed with articles of food, and is vomited; in hæmoptysis the blood is bright red, contains air, has an alkaline reaction, and is coughed up, while there is no nausea. When an aneurism ruptures into a bronchial tube, the hemorrhage is generally profuse, and it is soon followed by death. The blood spurts out in jets. There is a history of aneurism. If the blood comes from the mouth or fauces close inspection will reveal the fact.

Hæmoptysis should always excite a strong suspicion of tuberculous disease (Loomis and Flint).

Prognosis. As to final result is always unfavorable, but hæmoptysis rarely proves immediately fatal (Loomis).

Treatment. Absolute rest in a cool room, with the patient in bed and not allowed to sit up, turn over, or even speak above a whisper, is of the greatest importance. If the cough continues, full doses of opium must be given. Ergot, tannin, gallic acid, acetate of lead, spirits of turpentine, persulphate of iron, or a

mouthful of common salt may be administered. When the pulse is full and strong Loomis uses aconite; when it is weak, he employs morphia hypodermically. Ice-bags may be applied to the chest, and the patient urged to eat ice, and drink freely of cold drinks. Counter irritants are serviceable, such as mustard plaster, flying blister, or turpentine (Loomis and Flint).

PRESCRIPTIONS FOR HÆMOPTYSIS.

R Extracti ergotæ fld.....℥j.

Olei gaultheriægtt. iv.—M.

Sig.: A teaspoonful every hour at first; then every four to six hours. —Ringer.

R Infusi digitalis. ℥iv.

Sig.: A tablespoonful every hour until the pulse is reduced. —Brinton.

R Sodii chloridi. ℥ij.

Sig.: Take half teaspoonful dry. Repeat till nausea occurs. —Ringer.

R Pulv. aluminis.....℥j.

Sacchari albi. ℥ss.

Pulv. ipecac comp.....gr. xx.—M.

In pulv. no. vi div

Sig.: One powder every two hours. —Skoda.

R Plumbi acetatis.gr. xx.

Pulv. digitalis.gr. x.

Pulv. opiigr. v. M.

Ft. massa et in pil. no. x. div.

Sig.: One pill every four hours. —Bartholow.

HAY-FEVER.

Called also summer catarrh, hay-asthma, rose-cold, June-cold and autumnal catarrh, is an acute catarrh of the upper air passages chiefly, occurring at a fixed period annually, and disappearing after a variable duration (Bartholow).

Causes.—Emanations from roses, and new mown hay, or grasses, and the pollen of wheat, rye, oats and barley may excite the disease. When the neurotic temperament is present and a special tendency exists, various exciting causes, as heat, dust, etc., may excite summer catarrh (Bartholow).

Symptoms.—There are two forms in which the disease manifests itself—the catarrhal and the asthmatic. Hay-fever is distinctly periodical. It occurs at certain seasons only. In the catarrhal form, the onset is sudden in the majority of cases. The first symptom is an itching of the eyes, nose, behind the posterior nares, and the palate. This is followed by the flow of a transparent serous fluid, and then sneezing begins. Henry Ward Beecher, himself a sufferer from the disease, describes the sneezing as follows: “You never before even suspected what it really was to sneeze. If a pane of glass is gone, you sneeze. If you look into the sunshine, you sneeze. If you sneeze once, you sneeze twenty times. It is a riot of sneezes. First a single one, like a leader in a flock of sheep, bolts over; and then, in spite of all you can do, the whole flock, fifty by count, come dashing over in twos, in fives, in bunches of twenty.” The eyes water, and the conjunctiva reddens; the nasal mucous membrane swells and becomes hyperæmic; the breathing is carried on by the mouth. There is a sense of heat and burning in the nose and eyes, and pain shoots through the orbits. The throat is hot, dry and swollen.

In the asthmatic form, the larynx and bronchial tubes are swollen and hyperæmic. There is a croupy, or a wheezy bronchial cough. The patient is unable to lie down, struggles for breath, is pale, and covered with a cold sweat.

The duration of hay-fever is from a few days to three months, the average being about six weeks (Bartholow).

Treatment. There is no remedy so effectual as removal from the hay fever zone in time to prevent the attack. The patient may be exempt from the attack if on the ocean. The White Mountains, the Catskills, the Adirondacks, the Rocky Mountains, and the highest points of the Alleghenies, and many places by the seashore can be resorted to with confidence of relief. Quinine has been more useful than any other agent, and should be given in five grain doses three times a day for a week before the attack, and when the first symptoms of irritation of the nares are felt, a solution of the muriate should be applied to the nares.

When the disease has begun, the best results are obtained from fifteen grain doses of iodide of potassium every four to eight hours. Morphine gr $\frac{1}{4}$ and atropine gr $\frac{1}{60}$ are good when there is much secretion. Local applications are more effectual than internal remedies.

R Acidi carbolici5ij.
Tinct. iodi. 5v.—M.

Sig.: Add from one to five minims to a gill of water, and apply to the nose by means of a syringe.

A few drops of the tincture of iodine may be placed in a warm vial, and cautiously inhaled.

Cocaine in solution or in the form of a pellet placed alongside the septum and allowed to dissolve slowly, has proved to be the most effective agent for affording relief. The dose will be $\frac{1}{8}$ – $\frac{1}{4}$ gr (Bartholow).

PRESCRIPTIONS FOR HAY-FEVER.

R Cocaine muriatisgr. v.
Aque destillata5ij —M.

Sig.: Apply to nasal passages with a camel's hair brush.—Sajous.

R Syrupi acidi hydriodici.....3iv.

Sig.: A teaspoonful every two hours. —Judkins.

R Quinine muriatisgr. iv.-viiij.
Aque.....3j.—M.

Sig.: Apply to the nares with an atomizer. —Bartholow.

R Antipyrin.....5ss
Syrupi aurantii cort.3j.
Aque.ad3ij.—M.

Sig.: A teaspoonful one to three times a day. —Cheatham.

HEADACHE.

Called also cephalalgia, is properly a form of neuralgia, as it can only be referred to the sensory nerves supplying the meninges and scalp. It is a symptom occurring in many affections, such as active cerebral congestion, cerebral meningitis, the essential fevers, acute dyspepsia, syphilitic periostitis of the head, intracranial tumors, etc. Headache is extremely common. It

occurs in paroxysms, lasting usually from twelve to twenty-four hours (Loomis and DaCosta).

Varieties.—1. Congestive. 2. Astigmatic. 3. Headache from poisoning. 4. Headache in diseases of the brain. 5. Nervous, or neuralgic. 6. Sick-headache. 7. Sympathetic. 8. Uræmic. 9. Anæmic (DaCosta).

Causes.—An optical defect, as hyperopia, or astigmatism may cause an intense headache. A severe headache may be dependent upon decayed teeth, and will disappear with their removal. In acute inflammation of the brain, the pain is agonizing and continuous, and is associated with fever, vomiting and delirium. In abscess of the brain, and in softening, the headache is less violent, and is accompanied by signs of disturbed intellection and of deranged motion. In tumor of the brain, the headache is apt to be severe and paroxysmal, but intellection is not at first much affected.

In congestion of the brain the pain is dull, increased by stooping or lying down, by long sleep, and by bodily or mental fatigue, with flushed face and throbbing of the arteries of the neck. A form of congestive headache, apt to be relieved by bleeding at the nose, is often seen in young people at the age of puberty; the attacks are brought on by running or other violent exercise.

In diseases of the meninges, the pain is constant and fixed, and sometimes very sharp.

Nervous or neuralgic headache is most common in women, especially in anæmic women. It is very severe, yet of short duration.

Sympathetic headache is found mainly in connection with disorders of the alimentary tube, and of the uterus, and is often worse in the morning, before food has been taken. Headache may be dependent upon various poisons, as in Bright's disease, the retention of a large quantity of urea in the blood becomes the source of persistent pain in the head. Headache is common in lead poisoning, in opium-eaters, in drunkards, and after the use of strychnine and quinine. Headache increased by the erect posture and relieved by lying down bespeaks an anæmic condition of the brain. Sick-headache, or hemicrania, or migraine, or

migrain, has symptoms which set it apart. The pain is usually attended by nausea and vomiting, is generally at first one-sided, and the patient vomits bile (DaCosta). The vomiting often ends the attack. The face is flushed and red and light is hurtful to the eyes. The paroxysms may last for a few hours, or a day or two. Women are especially liable to attacks about the menstrual period. Attacks may occur every few days, every week, or every month, and in many they are induced by errors of diet. They usually disappear after the age of fifty.

Headache of gastric or hepatic origin is commonly frontal and throbbing in character. Headache at the vertex is symptomatic of cerebral disturbances, or it is due to reflex irritation starting in the pelvic organs of the female. Pain in the occipital region is mostly an accompaniment of disorders of circulation, and vaso motor spasm and anemia in particular. The pain of cerebral compression, or tumor, is generally localized, persistent, and very intense (Loomis and Bartholow).

Treatment.—In anæmic headache the inhalation of nitrite of amyl is serviceable. In congestive headache, ergot affords relief. The bromides and hydrate of chloral are sometimes efficacious. The inhalation of a little chloroform is sometimes efficient. Evaporating lotions to the head—alcohol, spirits, vinegar, or ether—in some cases afford marked relief. Hot water to the head sometimes relieves. Strong coffee or tea affords marked relief in some cases. The faradic and galvanic currents may be tried. During the intervals, nux vomica in small doses, arsenic, or small doses of quinia may be tried. The hypophosphites and cod-liver oil, continued steadily for months, have done good in debilitated subjects. Tobacco smoking should be prohibited.

PRESCRIPTIONS FOR HEADACHE.

- R Potassii citratis gr xx
 Spiritus junpert ʒj.
 Spts. ætheris nitrosi 2℥xx.
 Infusi scoparii ʒj.—M.
 Sig.: To be taken thrice daily (Uræmic form.) —W. H. Day.
- R Potassii acetatis 5vj.
 Infusi digitalis 3vj.—M.
 Sig.: A tablespoonful every third hour. (Uræmic headache.)

R Gran. efferv. bromo caffeine..... ʒiv .

Sig.: A teaspoonful in half glass of water—cold. Repeat in half an hour if necessary. (Nervous form.) —R. V. Mattison.

R Zinci phosphidi.....gr. iij.

Ext. nucis vomicæ.....gr. x.

Confect. rosæ.....q. s..... —M.

Ft. massa et in pil. no. xxx. div.

Sig.: One after each meal. (Nervous form.) —Fordyce Baker.

HEART BURN. (See Acidity.)

HEMICRANIA. (See Headache.)

HEMIPLEGIA. (See also Paralysis.)

Is a motor paralysis of one side of the body. It is generally the result of the lesion above the medulla, and most frequently of the corpus striatum, but may result from injury to a cerebral hemisphere or crus. It occurs on the side opposite to the disease or injury. (Loomis).

Causes.—Its most frequent cause is apoplexy, but it may be due to other cerebral injuries or disease, and is frequently functional. The cerebral causes are: Compression from bone, blood, pus, or inflammatory exudations, tumors, especially carcinoma sarcoma and gummata. Partial anæmia from thrombosis, embolism, softening, aneurism and apoplexy. Encephalitis, abscess, atrophy and sclerosis.

The spinal causes are as above, or any disease affecting a lateral half of the cord.

The functional causes are: Hysteria, chorea, epilepsy, diphtheria, malaria, poisons, etc. The muscles of the arm and leg are chiefly affected, while those of the trunk and neck often escape entirely. Of the cranial nerves the third, fourth, fifth, sixth and seventh and twelfth may suffer. If the fifth nerve suffers there will be anæsthesia of the face and cornea and paralysis of the muscles of mastication on the affected side. If the facial nerve suffers, the face becomes a blank and motionless, and the mouth is drawn toward the healthy side. If the twelfth nerve suffers the tongue will then be protruded with the tip pointed toward the affected side. The history of the case, the matter of inva-

sion, and other symptoms, will usually give a clue to the location of the lesion.

It has been noticed that paralysis caused by lesions in the motor tract above the ganglionic cells in the anterior cornua of the cord is seldom followed by much muscular atrophy or more than would be caused by inactivity, while disease affecting these cells or the peripheral nerve-trunks produces marked muscular atrophy as well as paralysis (Loomis).

Hemiplegia may be feigned; but the results of electricity, and the test proposed by Hughlings Jackson, that the arms do not, as in real hemiplegia, fall forward when the patient stoops, but are retained at the side, will usually detect the fraud (Da Costa).

Treatment.—In hemiplegia the constant current may be applied to the brain, for the purpose of improving its nutrition, and the faradic current to the muscles, to prevent wasting and loss of function from disease. In faradizing the muscles in a case of hemiplegia, a current of just sufficient intensity to cause contractions should be used. The hypodermatic injection of strychnine into the paralyzed muscles, after the local troubles have ceased, is very efficacious. In hemiplegia and other forms of paralysis due to intracranial lesions, the indications for the treatment by massage are a lowered state of the nutrition of the paralyzed parts, coldness and blueness of the skin, wasting and contracted muscles, ulcerations, etc (Bartholow).

HEART DISEASES. (See each particular affection).

Treatment in General.—Overaction of the heart, with hypertrophy, and without valvular lesion, is benefited by a quantity of aconite sufficiently large to moderate the cardiac movements (Bartholow).

In simple hypertrophy of the heart, without valvular lesion, the tincture of veratrum viride diminishes the overaction and gives relief. The irritable heart dependent on the excessive use of tobacco, on mental excitement, and on overstrain, is relieved by five drops of the tincture of veratrum viride three times daily (Bartholow). Digitalis is indicated when the action of the heart is rapid and weak, and the arterial tension low.

R Extracti ergotæ fluidi.....℥iiss.
Tincturæ digitalis.....℥ss.—M.

Sig.: A teaspoonful three times a day. (In enlarged heart without valvular lesion). —Bartholow.

R Ferri redacti.....
Quininæ sulphatis.....
Pulveris digitalis (English)....aa...gr. xx.
Pulveris scillæ.....gr. x.—M.

Ft. pil. no. xx.

Sig.: One pill three or four times a day. (In irritable heart of anæmia and chlorosis, and in fatty heart). —Bartholow.

In dilated heart, with difficult breathing, and general œdema, the hypodermic injection of morphine, the eighth to the sixth of a grain, two or three times a week, possesses a high degree of utility (Bartholow).

To stimulate the action of the heart when it flags, the ammonia preparations have an undoubted effect. It is a most common practice to inhale ammonia to prevent that depression of the heart's action called fainting (Bartholow).

R Cocaini hydrochloratis.....gr. vj.
Aquæ destillatæ.....℥ij.—M.

Sig.: A teaspoonful three times daily. (In nervous cardiac debility). —Rosenbach.

R Tincturæ digitalis.....℥ij.
Spiritus chloroformi.....℥v.
Infusi buchu.....ad℥xij.—M.

Sig.: Two tablespoonfuls in a wineglassful of water three times daily. (In simple cardiac debility). —Fothergill.

R Strychniæ sulphatis.....gr. j.
Aquæ℥j.—M.

Ft. sol.

Sig.: Eight to fifteen minims hypodermically. (For exhausted heart muscle and its nerves). —Habershon.

R Vini cocæ Mariani.....O. j.

Sig.: A wineglassful three or four times daily (In overstrain of heart).

HEMORRHAGES.

Treatment.—Digitalis has an undoubted power to arrest hemorrhage. The mechanism of its action is similar to that of

ergot; it slows the action of the heart and contracts the arterioles.

R Infusi digitalis..... $\bar{3}$ ij.
Tincturæ krameriæ
Ext. ergotæ fluidi.....aa $\bar{3}$ j.—M.

Sig.: A tablespoonful pro re nata. —Bartholow.

Active hemorrhage, occurring in the plethoric, is sometimes stopped by full medicinal doses of veratrum viride (tincture \mathfrak{M} v). The value of acetate of lead in various forms of hemorrhage has been attested by an immense clinical experience. In hæmoptysis and hæmatemesis it is a most useful hæmostatic, given in five grain doses every three hours. Chloride of barium in dose of gr., 1-10-gr., ss. has proved very useful in hemorrhage. Ipecac is a most valuable remedy in hæmoptysis, epistaxis, menorrhagia, postpartum hemorrhages, etc. It arrests all kinds of hemorrhage, and should be given in frequently repeated doses until vomiting occurs.

R Extracti ipecac fluidi..... $\bar{3}$ ij.
Extracti ergotæ fluidi..... $\bar{3}$ iv.
Extracti digitalis fld..... $\bar{3}$ ij.—M.

Sig.: Thirty minims to a teaspoonful at a dose as required.

—Bartholow.

The fluid extract of ergot will often arrest the bleeding of hemorrhoids and cause such a contraction of the vessels in recent cases, as that the symptoms may entirely disappear. Ergot is used in various forms of hemorrhage. It is used in epistaxis, hæmoptysis, renal, intestinal and uterine hemorrhage. One to two drachms of the fluid extract, given every half hour or hour, will be necessary in urgent cases. In hæmoptysis the ergot may be given as follows:

R Extracti ergotæ fluidi..... $\bar{3}$ ij.
Extracti ipecac fluidi.
Tinct. opii deodorataa..... $\bar{3}$ ss.—M.

Sig.: A teaspoonful every half hour or hour. —Bartholow.

In renal hemorrhage, the following is useful:

R Extracti ergotæ fluidi.....
Tincturæ krameriæ—aa..... $\bar{3}$ ij.—M.

Sig.: A teaspoonful every hour or two. —Bartholow.

In passive hæmorrhages, the following is useful:

R Olei terebinthinæ..... $\bar{3}$ ij.
 Extracti digitalis fld..... $\bar{5}$ j.
 Mucil acaciæ. $\bar{3}$ ss.
 Aquæ menthæ pip. $\bar{3}$ j —M.

Sig.: A teaspoonful every three hours. —Bartholow.

The following mixture is very effective in menorrhagia, hæmaturia, purpura hæmorrhagica and the hæmorrhagic diathesis:

R Acidi gallici $\bar{3}$ ss.
 Acidi sulph. dil. $\bar{3}$ j.
 Tincturæ opii deodor..... $\bar{5}$ j.
 Infusi rosæ comp $\bar{3}$ iv. —M.

Sig.: A tablespoonful every four hours or oftener Bartholow.

Astringents, such as alum, acetate of lead, iron subsulphate and chloride, sulphuric acid, tannin, gallic acid and the vegetable astringents are employed locally and systemically in the various kinds of hæmorrhage. When the blood pressure is high and cerebral hæmorrhage threatened or proceeding, venesection, or leeches, or purgatives (saline) are the most effective.

In uterine hæmorrhage, full doses of the fluid extract of ergot will give good results. Ipecac carried to nausea merely is highly effective. Digitalis and sulphuric acid diluted in small doses frequently repeated are highly serviceable.

Monsel's solution one part and water three parts may be injected into the uterine cavity to arrest bleeding, if the os is patulous (Bartholow).

PRESCRIPTIONS FOR HÆMORRHAGE.

R Argenti nitratis fusæ.... .q. s.....

Sig.: Wipe the wound dry, and apply locally. (In leech-bites.)
 —Ringer.

R Acidi acetici dil..... $\bar{3}$ vj.

Sig.: Apply locally. (For leech-bites, piles, cuts.) —Ringer.

R Tincturæ opii..... $\bar{3}$ j
 Spts. vini gallici..... $\bar{3}$ j.—M.

Ft. haustus.

Sig.: To be taken at once. (In flooding after delivery, with uterine exhaustion.)
 —Ringer.

R Tincturæ hamamelis.....℥iv.

Sig.: Use pure or diluted. (In cuts, leech-bites, oozing from wounds, etc.) Also internally three minims every three hours.

—Ringer.

HEMORRHOIDS, OR PILES.

Are small tumors at the anal verge. *Kinds*, bleeding and non-bleeding. The bleeding piles are generally the internal, and composed of a highly vascular tissue involving the mucous membrane of the rectum and the submucous tissue with enlarged arteries and veins. If the artery is enlarged the tumor has a bright-red aspect and is called the strawberry pile. If the vein is enlarged, the tumor has a dusky hue.

The non-bleeding, or external piles, are composed of loose folds of the skin that surround the anus, or a varicose, inflamed or ruptured vein. The treatment of external piles is simple, and excision is the only radical cure.

In the early stage of the affection local cleanliness, and abstinence from highly seasoned food and strong wines, are mostly sufficient. The bowels must be kept clear. When local irritation exists, an ointment of zinc and the extract of belladonna is very useful (Bryant).

Causes.—Constipation, sedentary habits or occupations, and high living appear to have the strongest influence. Pregnancy and abdominal tumors are causative. Internal piles are very insidious in their growth—bleeding is often the first symptom that attracts attention.

Treatment.—Is both medicinal and surgical. All piles do not require removal. The medical or palliative treatment of piles means attention to diet, the giving up of high living and strong drinks, and the taking of simple, nutritious food in moderation. The bowels should be kept open by purgatives, or enema. Absolute local cleanliness should always be observed. By these different means an attack of piles may pass away never to return. When the piles are inflamed, hot or cold applications are useful.

Surgical Treatment.—Unless the general condition of the patient forbids, all piles, external or internal, should be removed. External piles ought to be removed by abscission. Internal

piles ought never to be excised, but destroyed by the galvanic or actual cautery, crushing, or the ligature. In Paris a plan of treatment has been successful which consists of forced anal dilatation, either by the thumbs, or by means of a dilator, the piles withering after one full dilatation of the anus.

The Ligature Method. The surgeon grasps the base of the pile to be ligatured by a pair of forceps, and separates the pile from the skin and submucous tissue by scissors, and then transfixes it with a needle armed with a double silk ligature. He should then divide the cord and tie the pile tightly in halves, and cut off half of the strangulated portion. The other masses are treated similarly. The ligatures slough off about the seventh or tenth day.

After Treatment. After the operation an opiate may be given. The bowels should be left undisturbed for two days, when a dose of castor-oil or enema may be given. If oedema of the parts follow, ice may be applied or a lotion of lead and opium.

The Cautery Method.—The galvanic cautery is preferable to the actual. The anus is to be forcibly dilated, and each mass is then to be seized in turn by a clamp, and the projecting half of each mass must then be cut off with scissors, the surface wiped dry, and the cautery, heated to a white heat, applied to the surface, the whole projecting portion being burned down to a level of the clamp. The clamp should be removed so as not to disturb the eschar. When all the piles have been treated, the whole projecting mass may be returned into the rectum with the fingers well greased, and a suppository of opium or morphine introduced at this time to soothe the pain. The after treatment is the same as in ligature.

Treatment by Crushing.—A clamp, is to be adjusted as in the operation for cautery, and the protruding pile cut off with scissors. The clamp which is very strong, is left on the pile for one minute.

Treatment by the Subcutaneous Injection of Carbolic Acid. It is applicable to internal piles alone, and one pile should be treated at a time, about a week being allowed between the operations. About one to six drops, of a solution of carbolic acid in thirty of olive

oil or glycerine should be injected with a hypodermic syringe into the pile, which turns white, and in successful cases withers without pain or sloughing.

Dr. A. A. Smith of New York, gives the following:

R Acidi carbolici.....gr. vj.
Cocaini hydrochloratis.....gr. x.
Glyceriniʒiij.—M.

Sig.: Inject ten minims into the tumor or pile.

When a fissure or painful ulcer coexists with hemorrhoids, its base should be lacerated by forcible dilatation of the anus.

In operating on piles the surgeon must be careful not to take away too much tissue. In rectal operations, it is probably advisable to use anæsthetics in all cases (Bryant).

PRESCRIPTIONS FOR HEMORRHOIDS.

R Ferri sulph.....gr. xx.
Pulv. aloes Soc.....
Extracti opii aq
Sapo cast.....aa.....gr. x.—M.

Ft. pil. no. xx.

Sig.: One pill morning and evening: —Fordyce Baker.

R Tincturæ nucis vomicæ.....ʒj.
Ext. ergotæ fld. ʒj.—M.

Sig.: A teaspoonful three or four times a day. (For bleeding piles and post partum piles). —Bartholow.

R Tinct. hamamelisʒiv.

Sig.: One-half to one teaspoonful in an ounce of cold water, injected into the rectum daily before rising. Also take internally two to five minims three times daily. —Ringer.

R Acidi nitriciʒss.-j.
Aquæ.....ʒviiij.—M.

Ft. lotio.

Sig.: Apply as a wash. (In bleeding piles). —Ringer.

HEPATITIS. (Interstitial). (See Cirrhosis).

HEPATITIS. (Circumscribed Suppurative.)

Is an abscess of the liver.

Causes.—Pyæmic infarction, phlebitis, the result of operations on the intestines (as for prolapsus ani, hemorrhoids, and

strangulated hernia), and intestinal traumatism, may give rise to abscess of the liver. Hot climates, miasmatic influences and dysentery are regarded as causes of abscess of the liver. Ulceration of the stomach, of the intestine, gall-bladder and appendix, ulcerative endocarditis, and cancer of the stomach are often associated with abscess of the liver. Obstruction to the common duct by worms or calculi may lead to ulceration followed by abscess of the liver (Loomis).

Symptoms.—A slight feeling of chilliness, sometimes a distinct chill, is followed by dull pain and weight in the right hypocondrium, the pain often radiating to the tip of the right shoulder. The chilly sensations recur. The pain increases and is aggravated by position and pressure. The tongue is brown and furred, there is loss of appetite, slight nausea, and often vomiting. There is dyspnoea and a short dry cough resembling that of pleurisy. With the formation of the abscess, there are hectic rigors and recurring night sweats, persistent and profuse vomiting, the pain becomes sharp and localized, the temperature rises, and exhaustion and emaciation are rapidly developed. Hepatic abscesses may be discharged in a variety of ways: through the abdominal wall, into the peritoneal cavity, into the stomach, intestines, etc. (Loomis).

Physical Signs.—If the abscess is large, inspection will show a bulging of the right hypochondriac region. By palpation the liver is enlarged and has an uneven feel. The pain is increased by pressure, and localized. Fluctuation may be present. By percussion the area of hepatic dullness is increased.

Prognosis.—The majority of abscesses of the liver terminate fatally.

Treatment.—When pus has formed, and the locality of the abscess can be determined, aspiration should be performed. The abscess should be opened as soon as possible (Loomis).

HERPES.

Is an acute, non-contagious affection, characterized by the development of one or more groups of vesicles, and accompanied by burning heat, pain or itching, which runs its course in from one to three or four weeks, and may recur (Anderson).

Varieties.—1. Herpes facialis. 2. Herpes præputialis. 3. Herpes iris. 4. Herpes zoster, or shingles.

Herpes facialis is the most frequent, and the parts most commonly attacked are the red portions of the lips, but any part of the face, or even the mucous membrane of the nose, palate or tongue may be involved. At first there is redness and burning heat, then little elevations appear, which soon develop into vesicles, often of large size; these at first are filled with clear serum, which soon becomes opaque or even purulent.

Causes.—In many cases it is consequent upon catching cold, or upon digestive derangement. It is also, a very frequent accompaniment of febrile affections, especially pneumonia in which disease its occurrence may even aid the diagnosis. *Herpes præputialis* is most often met with on the prepuce, but may be seated upon the glans, or even upon the skin, and in women upon the labia. The vesicles very soon rupture, so that often by the time attention is directed to the part by the burning heat, only a group of little excoriations is to be seen. These are irritated by the secretion and may be mistaken for soft chancres, especially as the eruption sometimes follows connection. This variety of herpes is often very troublesome, and may recur half dozen times in the course of a year. It is said to be more apt to occur in those who have suffered from venereal diseases. *Herpes iris* is rare, and is met with in young persons. It occurs in spring and autumn, and attacks most usually the dorsum of the hands and feet, and the fingers and toes. All the colors of the rainbow may usually be observed at one time or another in the course of the disease. *Herpes zoster, or Shingles*, is the most serious of the forms of herpes, and differs from the others in that the eruption follows the course of certain cutaneous nerves. In its most typical form, it affects one side of the chest. It may attack other parts of the trunk as well as the extremities, the head and neck, where it also follows the course of a nerve. Neuralgic pains usually accompany it (Anderson).

Treatment.—In all varieties of herpes the part must be dusted with some soothing powder. Arsenic is the best internal remedy. The diet should be light, and saline aperients should

be used. Dr. Meredith recommends the painting of the part with oil of peppermint to relieve the pain (Anderson.)

PRESCRIPTIONS FOR HERPES.

R Zinci oxidi.....3ij.
 Glycerinæ3ij.
 Liq. plumbi subacetat dil.....3iss.
 Liq. calcis.....3vi.-viiij.—M.
 Ft. lotio.

Sig.: Apply locally. —Tilbury Fox.

R Hydrargyri chloridi mitis.....3j.
 Unguenti simplicis.....3j.—M.
 Ft. ungt.

Sig.: Apply locally. —Pareira.

HICCOUGH.

Treatment.—Apomorphia cured a case of persistent hiccough when hypodermic injections of morphia and atropia had failed. Camphor has been recommended in hiccough. Chloroform, combined with opium, is said to control persistent hiccough (Ringer). A hypodermic injection of morphia often arrests persistent hiccough. Cases of obstinate and even dangerous hiccough are reported which have been immediately cured by drinking an infusion made with a teaspoonful of mustard steeped in four ounces of boiling water for twenty minutes, and then strained (Ringer).

PRESCRIPTIONS FOR HICCOUGH.

R Pilocarpinæ muriatis.....gr. $\frac{1}{8}$.
 Aquæ destillatæ.....℥x.—M.

Sig.: Inject hypodermically. —Ortille.

R Pulveris sinapis.....3j.
 Aquæ bullientis.....3iv.—M.
 Ft. infusum.

Sig.: Take at one draught. —Ringer.

R Apomorphiæ muriatisgr. $\frac{1}{10}$.
 Aquæ destillatæ℥x.—M.

Sig.: Inject hypodermically. —Ringer.

HYDROCEPHALUS.

Is dropsy of the brain. It may be congenital or acquired. The congenital consists in an excess of the cerebro-spinal fluid, lying either externally to the brain, or more frequently in its interior (Smith).

Causes. Syphilis may be a cause of congenital hydrocephalus, but in many cases the cause is unknown. It may be associated with spina bifida (Smith, J. L.)

Symptoms. -While the volume of the head increases, emaciation of the neck, trunk and limbs is common. In the last stages, there is more or less vomiting. As the liquid increases, the child becomes drowsy and takes no notice of objects, and finally convulsions occur (J. L. Smith).

Prognosis.—Unfavorable.

Treatment.—Digitalis, squills, acetate of potassium, and iodide of potassium are the remedies for this affection. One or two grains of iodide of potassium may be given every two hours to an infant of three months. A close-fitting cap may partially prevent the expansion of the head. Tapping frequently gives temporary relief, and should be performed with a very small trocar, which should be introduced in the coronal suture about an inch external to the anterior fontanel (J. L. Smith).

Causes of Acquired Hydrocephalus.—Meningeal inflammations, tumors or other causes which obstruct the venous circulation, prolonged passive congestion, affections of an exhausting nature, and protracted infantile diarrhœa.

Symptoms. -The child has headache, is irritable, is delirious, drowsy, and its head seems too heavy for its body and is buried in the pillow (J. L. Smith).

Prognosis.—Unfavorable.

Treatment for the Acquired.—Cold applications to the head. The bowels should be kept open, and derivatives should be applied to the feet and back of the neck. The acetate and iodide of potassium may be given, and vesication should be produced behind the ears (J. L. Smith).

PRESCRIPTIONS FOR HYDROCEPHALUS.

- ℞ Collodii cum cantharides.....ʒiv.
 Sig.: Paint the back of neck every few days. —Hartshorne.
- ℞ Olei tiglliiʒij.
 Mucil acaciæ.....ʒij.
 Aquæ destillatæ.....ʒj.—M.
 Sig.: The fourth part every four hours. (Said to remove fluid from the ventricles). —Dungleson.
- ℞ Potassii iodidi.....ʒss-j.
 Syrupi aurantii cort.....ʒj.
 Aquæ.....adʒiv.—M.
 Sig.: A teaspoonful every two hours to an infant of six months. —J. L. Smith.

HYDROTHORAX.

A dropsy having its seat in the pleural cavity is called hydrothorax, or water on the chest. It differs from pleurisy in the character of the fluid and in the state of the pleura. In pleurisy the effusion is an inflammatory exudation, and the pleura is the seat of an inflammation; in hydrothorax the fluid transudes, and the pleura is unaffected (Bartholow).

Causes.—It is due to an organic disease of the liver, heart, or kidneys, and the serum collects in both pleural sacs. An effusion caused by an inflammation of the pleura is nearly always one sided. It may occur in any exhausting disease which causes general hydræmia, and is usually associated with dropsies in other parts of the body. Chronic malarial poisoning and Bright's disease may cause it.

Symptoms.—There is no fever nor pain in the side. The first symptom referable to the thorax is increasing difficulty of breathing, until the patient reaches a condition of extreme distress; the lips become livid, the finger ends blue, and the respiration gasping. He is unable to lie down, and can speak with difficulty. There may be a short dry cough. The physical signs of hydrothorax is fluid in both pleural cavities, which is not attended by friction sounds or vocal fremitus (Loomis).

Treatment.—If there is much effusion, delay is unsafe and thoracentesis should be promptly performed. As serum will

flow through a fine capillary needle, but little pain and no danger attend the operation of aspiration. Such remedies as hydragogue cathartics, and diuretics are useful. Elaterium is the best. Digitalis should be given (Bartholow and Loomis).

HYPOCHONDRIASIS.

Is a disorder of the mind, but the mental aberration is not regarded as amounting to insanity, and patients with this affection are not proper subjects for treatment at lunatic asylums. Cases are frequent and they claim the services of the general practitioner.

The characteristic feature of the affection is a morbid apprehension of either the existence of, or a liability to some serious disease (Flint).

Forms.—In its mildest form it consists of a feeling of extreme delicacy of constitution. Existing in this form, it leads to an anxiety concerning health and over-precautions for its preservation. In the severest form of the affection, patients suffer from the conviction that they have an incurable malady. The hypochondriac is the victim of a delusion with respect to his condition. Disease of the heart, consumption, cancer, syphilis, tapeworm, softening of the brain and diabetes are among the diseases which in different cases are supposed to exist. Hypochondriacs frequently consult many physicians in succession, but no one is able to convince him of his delusion. Persons of education and strong mental powers are as liable to the affection as those who are ignorant and of feeble mind. Some patients imagine they have one particular disease, others imagine they have various diseases, or fix upon one for a time and then another (Flint).

Causes.—Are both physical and mental. Some persons are constitutionally liable to morbid apprehensions in this direction. Whenever they are ill with any affection, their mental constitution leads to a sense of danger, and to despondency as regards recovery. This state of mind exerts a depressing influence which may interfere seriously with the favorable progress of disease. Masturbation, excessive sexual indulgence and the intemperate use of alcoholic stimulants are causative.

The reading of legitimate medical works is to be mentioned among the causes of hypochondriasis. Want of mental occupation may cause it; and persons who have relinquished active pursuits often become hypochondriacs. Misfortunes are causative.

The physical disorders are anæmia, neurasthenia and dyspepsia.

Treatment.—Remove the supposed causes if possible. Over-exertion, mental or physical, is to be avoided. Sexual abuses, intemperance and any violation of the laws of health are to be inquired into and reformed. Anæmia and dyspeptic ailments claim treatment. Remedies have a useful moral effect within certain limits. Patients often crave remedies. The mental treatment is the most important. It is not wise to attempt to dispel the delusions by ridicule or indifference, but by argument and assurances. The patient's attention should be diverted from himself. Change of scene and new associations should be advised.

PRESCRIPTIONS FOR HYPOCHONDRIASIS.

R Liq. potassii arsenitis.....℥xL.

Tinct. opii.....ʒj.

Aquæ menthæ pip.....adʒiiss.—M.

Sig.: A teaspoonful three times daily. (In aged with gloomy fancies). —Lemare-Picquot.

R Morphiae sulphatisgr. i-ij.

Sacchari lactis.....gr. x.—M.

In pulv. no. xii. div

Sig.: A powder three times daily for at least two months.

—Hammond.

R Mist asafoetidæʒiv.

Sig.: One to two teaspoonfuls three or four times daily.

—Bartholow.

R Potassii bromidi.....ʒss.

In pulv. no. xii. div.

Sig.: A powder in cold water three times daily.

—Ringer.

R Auri chloridi.....gr. i-iss.

Ext. gentianæ.....gr. xv.—M.

Ft. massa et in pil. no. xxx. div.

Sig.: One pill thrice daily.

—Bartholow.

HYSTERIA.

Is a functional nervous trouble, characterized by various motor, sensory and intellectual disturbances (Bartholow).

Causes. Hysteria is almost exclusively confined to women. It is most frequent between the ages of fifteen and twenty-five. If the neurotic type of constitution is inherited, in one generation it may assume the shape of hysteria; in the next epilepsy; and in the third insanity. It is not due to derangement of the uterus and ovaries, but to a peculiar morbid state of the nervous system. This peculiar state of the nervous system may be acquired by faults of early training, by a lack of personal discipline; by mortification or chagrin. Anæmia and an impoverished condition of the blood may cause hysteria. The disturbances may be in the digestive system, in the circulatory, in the sexual, or in the nervous. It is most liable to occur in members of families in which epilepsy, chorea, catalepsy and insanity have occurred. Fright, anger, jealousy, grief and disappointment predispose to its development. Among savage nations and hard working women it is unknown or rare. It is apparently contagious (Bartholow and Loomis).

Symptoms. The first symptoms are usually trivial—mere irritability of disposition, rapid changes of feeling, noisy transitions of sadness and joy, tears and laughter. There are quick alternations of cold and heat, that are purely subjective; numbness, tingling, suffocative feelings, pain around the heart, palpitations, quick breathing, a sense of fullness of the stomach, eructations of gas, and the rising of a globe to the larynx (*globus hystericus*), producing a sensation of choking, restlessness, the whole ending, it may be, in prolonged laughter, but more usually in crying, and in a profuse urinary discharge, the urine being pale and watery. In the more severe attacks, patients laugh and cry, choke, gasp for breath, sob and cough; the jaws are fixed, the face retracted, the teeth grinding together, the hands clinched, the limbs drawn up and rigid. In some cases there are tonic and clonic convulsions. There is no loss of consciousness. In some cases there is a death-like pallor of the face and half-closed eyes. The attack is more apt to occur during the menstrual

period. Headache is the most common form of pain. Colics are frequent. Paralysis is sometimes a symptom of hysteria. Gastralgia, irritable bladder and spinal irritation are frequent symptoms (Bartholow). During their hysterical paroxysms, they always want an audience; they crave attention and sympathy. Pain in the skull, as if a nail were being driven into the head, or a kettle were simmering on top of it, called by the ancient physicians *clavus hystericus*, is by many regarded as pathognomonic. The whole or only a part of the cutaneous surface may be hyperæsthetic or anæsthetic. There is often pain in the joints.

Differential Diagnosis. Hysteria may be mistaken for epilepsy, hypochondria and neuralgia. It is distinguished from epilepsy by its slow onset, by incomplete coma, a normal pupil, sobbing and crying. The tongue is not bitten in hysteria. In hypochondria the patient is always morose; there are not those variations in temper that are so characteristic of hysteria. Hypochondria is rare before the thirtieth year, is more common in men than in women. The two diseases may be conjoined (Loomis). Neuralgia, if of hysterical origin, ceases when the patient's attention is diverted.

Treatment. Moral and hygienic measures are most important. Self-control should be instilled into the mind. Early hours, substantial food, and plain clothing should be insisted upon, while society, the follies of dress and fashion, and dainties should be prohibited. The proper books should be selected for young ladies. Sexual abuses have an injurious effect on the nervous system. For anæmia, iron, arsenic, and strychnine should be given. For the seizure, a little fluid extract of valerian, or a few drops of Hoffman's anodyne repeated every few minutes will terminate the attack. In the convulsive form, inhalations of amyl nitrite or of ethyl bromide may be practiced. The migraine may be cured by use of *lux vomica*, arsenic, aconitine, and galvanism. Hysterical aphonia and dysphagia may sometimes be cured instantly by faradic applications. Anæsthesia is best treated by the electric brush. The various forms of hysterical paralysis require faradic applications. Mitchell has devised a plan of treatment for bed fast hysterical subjects which seems very successful. It consists in the combined use of massage,

faradization, and forced feeding. Massage consists in friction, kneading and tapping of all the muscles, in passive motion to all the joints. The diet consists at first of milk only. No exercise is allowed, but all movements are made for the patient. The patient is separated from all her former associations and the superabundant sympathy of home. She is placed in bed in charge of a nurse, and not permitted to move; the desire for action grows out of the utterly monotonous idleness (Bartholow).

PRESCRIPTIONS FOR HYSTERIA.

℞ Tinct. opii ʒj.
Tinct. nucis vomicæ..... ʒij.—M.

Sig.: Three drops in water thrice daily. (For weight on the head, flushings, hot and cold perspiration). —Ringer.

℞ Paraldehyde ℥xxx.
Syrupi simplicis..... ʒss.
Aquæ menthæ pip. ʒj.—M.

Ft. haustus.

Sig.: To be taken at a draught. (To produce sleep).

℞ Spiritus ætheis compositi
Tinct. valerianæ ammon.....aa... ʒj.—M.

Sig.: A teaspoonful in water every fifteen minutes until relieved. —Bartholow.

℞ Apomorphiæ muriatis gr. j.
Syrupi simplicis..... ʒiv.
Aquæ.....ad ʒx.—M.

Sig. A teaspoonful as required. Repeat in a few hours if necessary. —Ringer.

℞ Ext. salicis nigri.....
Elixir simplicis.....aa..... ʒj.—M.

Sig.: A teaspoonful three times daily. —Hutchinson.

℞ Ferri citratis ʒij.
Syr. simplicis ʒss.
Aquæ aurantii flor.....ad..... ʒvi.—M.

Sig.: A tablespoonful three times daily. —Hartshorne.

℞ Ammonii bromidi..... ʒij.
Spiritus ammoniæ aromat..... ʒj.
Aquæ..... ʒiv.—M.

Sig.: A dessertspoonful thrice daily. —Hartshorne.

R Liquoris potassii arsenitis℥ss.

Sig.: Three to five drops thrice daily after meals. —Bartholow.

R Extracti conii fluidi.

Ext. hyoscyami fld.....aa.....℥vij.

Chloral hydratis.....gr. x.

Aquæ.....ad.....℥j.—M.

Ft. haustus.

Sig.: To be taken as a single dose and repeated as required.

—Madigan.

HEAT STROKE.

Called also sunstroke, insolation, or heat fever, is the complex of symptoms occurring in persons exposed to extreme heat under unfavorable circumstances (Loomis).

Causes.—It is due to the influence of excessive heat—natural or artificial. The habitual consumption of spirits, beer, and alcoholic beverages, and excessive fatigue and overcrowding predispose to attacks. Workmen, soldiers on the march, cab-drivers, or brain workers are more liable to be overcome by the heat. Hot, wet, muggy days—our August dog-days—are the most favorable for its occurrence. In Dakota men can work all day exposed to the sun when the temperature of the air is at least 140° to 160° while in New York on a cloudy, wet day in August, with the temperature at only 93 degrees, large numbers of men and animals are prostrated (Loomis).

Symptoms.—The majority of the cases occur in the middle of the day. In mild cases the patient suddenly becomes exhausted, and probably faints, or becomes semi-comatose. He is utterly prostrated; the skin is pale, cold and moist; the pulse is quick and feeble, and all kinds of symptoms are referred to the head—floating, swimming, vertigo, fullness and neuralgic pain. These cases may recover or terminate fatally from heart failure. In a severer form, a man may be struck down suddenly, unconsciousness suddenly follows; the skin is cold, the pulse is feeble, and death may result from heart failure. In another form called thermic fever, the temperature rises to 108° or 110° F. or even higher. This is due to the influence of heat on the nerve centre. It often occurs at night and in those who are dissipated

or worn out. There is great restlessness, thirst, dyspnœa, and the skin is burning hot. Delirium and epileptiform convulsions are common, and finally the patient passes into a complete coma, with stertorous breathing (Loomis).

Differential Diagnosis.—It may be mistaken for acute meningitis. In the latter the projectile vomiting, the boat belly, the pale face, and the tense, hard, wiry pulse are in striking contrast to the symptoms of sun-stroke. Acute alcoholismus may be confounded with sun-stroke, but the history of the case will decide (Loomis).

Prognosis.—Except in mild cases, is very bad; nearly one-half die. (Loomis).

Treatment.—The patient must have absolute rest and plenty of cool, fresh air. Stimulants are often necessary. In most cases the cold water treatment is the best. The patient should be taken to the nearest pump, stream or water-tank and immersed for a considerable time, or a stream of cold water should be poured over the head, neck and back. In the thermic fever form, ice water should be applied to the surface, the bowels should be moved by a saline and morphine and quinine given. The inhalation of ether or chloroform is often of service in this form (Loomis).

HECTIC FEVER.

Is a fever of irritation. It accompanies many chronic diseases in which destruction of tissues occur, especially phthisis. It is a form of remittent fever, consisting of an exacerbation, once or sometimes twice a day, depending on suppuration in many cases (DaCosta).

Symptoms.—One of the first symptoms is a slight increasing frequency of pulse, and a small degree of heat of skin, generally toward evening. The heat is especially felt in the palms of the hands and the soles of the feet. The fever reaches its height about midnight and terminates by a profuse perspiration toward morning. The respiration is quick and short. The appearance of the face is characteristic, there being a circumscribed blush in the centre, known as the "hectic flush." The patient loses flesh rapidly. The pulse is above 80 and is soft. The temperature

as a rule varies from 99° to 101° F. Hectic fever is always symptomatic of some particular disease, of profuse discharge, as of pus or blood, or of an abscess of the brain, lungs or liver, and is in part due to the entrance of septic products into the blood, as in septicæmia.

Treatment.—Remove the diseased part, or let out the pus. The diet should consist of animal and farinaceous food, eggs, macaroni, milk, wine, beer, etc. Quinine, sulphuric acid and iron are the medicines generally indicated. For diarrhœa, aromatic sulphuric acid, opium, and chalk mixture are efficient.

Night Sweats.—Sponge the surface with cold water, or alum and water. Fifteen drops of aromatic sulphuric acid three times daily, or an $\frac{1}{8}$ gr. of sulphate of atropia combined or not with oxide of zinc, two or three grains, may be given at bedtime (Compend).

PRESCRIPTIONS FOR HECTIC FEVER.

- | | | | |
|-------|--|------------|-------------|
| R | Quiniæ sulphatis | 3j. | |
| | In pulv. no. xii. div..... | | |
| Sig.: | A powder in water three times daily. | | —Phillips. |
| R | Syr. calcis lactophosphat..... | 3iv. | |
| Sig.: | A teaspoonful three times daily. | | —Beneke. |
| R | Tinct. digitalis..... | 3iij. | |
| | Tinct. ferri chloridi | 3v.—M. | |
| Sig.: | Fifteen drops in water three times daily. | | —Bartholow. |
| R | Antipyrin | ...gr. xL. | |
| | Aquæ | 3viiij.—M. | |
| Sig.: | Two tablespoonfuls, followed by one tablespoonful every hour till temperature is normal. | | —Pribram. |

HIVES. (See Urticaria).

HOARSENESS.

Treatment.—Chronic bronchitis and hoarseness produced by singing and by simple acute catarrh are relieved by ten minim doses of dilute nitric acid. Aphonia due to fatigue of the vocal cords and hysterical aphonia may be removed very speedily by a

morning and evening dose, ($\frac{1}{15}$ - $\frac{1}{10}$ of a grain) of atropine (Bartholow).

Ten grains of alum to the ounce of water is used in the form of spray for chronic coughs and hoarseness (Ringer).

Dr. Carson finds that a piece of borax the size of a pea, dissolved in the mouth, acts magically in restoring the voice in cases of sudden hoarseness brought on by a cold, and frequently for an hour or so, it renders the voice "silvery and clear." Borax is useful in hoarseness common among clergymen and singers. In chronic inflammation of the throat, a few applications of glycerine of tannin brace up the tissues and lessen or remove the hoarseness. The ipecac (wine) spray is useful in hoarseness from congestion of the vocal cords. Where the hoarseness has lasted a few days only, or one or two weeks, the spray often speedily cures. At the commencement of a feverish cold, a Turkish bath will cut the attack short, remove the aching pains, and relieve or cure the hoarseness at once (Ringer).

HORDEOLUM. (See Sty.)

HOUSEMAID'S KNEE.

Is an inflammation of the bursa of the knee, between the patella and skin, which is common to housemaids, from kneeling. It is usually chronic, but may be acute. It causes great pain and swelling, the swelling being superficial and in front of the patella. An enlargement of the bursa at the elbow is called "miner's elbow." Bryant has seen the bursa enlarge over the acromian process in men who carry timber; over the tuberosity of the ischium in weavers; over the external malleolus in tailors; over the malleoli, and also the instep, from pressure of a boot; over the ball of the great toe in cases of bunion, etc.

Treatment. Rest, leeches, fomentations and purgatives; if these do not bring relief, an incision should be made into the swelling. After evacuating the contents of the sac, a small quantity of equal parts of tincture of iodine and alcohol should be injected into it. Dr. Lewis recommends injections of carbolic acid. It may be tapped (Bryant and others).

HYDROCELE.

Is an accumulation of serum in the tunica vaginalis testis, and it may be of the spermatic cord. The swelling of hydrocele first shows itself at the lower part of the scrotum and gradually rises till it arrives at the abdominal ring. It is of a pyriform shape. Usually it is attended with pain. Commonly there is no discoloration of the scrotum. In hydrocele the testicle is two-thirds of the way down the tumor at the posterior part, but it may sometimes be found in front, or at the bottom. The diagnostic signs are a sense of fluctuation, transparency, lightness and freedom from pain. In very old cases the transparency may be absent.

Congenital Hydrocele. When the tunica vaginalis preserves its communication with the abdomen, and then becomes filled with serum, it is called congenital hydrocele. On being raised and compressed the fluid is slowly squeezed into the abdomen, and slowly trickles down again afterward.

Treatment.—Is either palliative or curative. The evacuation of the serum constitutes the palliative treatment. This is accomplished by a puncture with a small trocar and canula. Palliative treatment is sufficient for children, but rarely so in the case of adults. The radical cure is performed by injecting into the sac a fluid composed of one drachm of tincture of iodine, and one or two drachms of water, after first having withdrawn all the serum from the sac. When the inflammation subsides the fluid generally secretes no longer. Dr. Lewis recommends injections of a half a drachm to a drachm of pure carbolic acid liquefied with water or glycerine into the sac. In obstinate cases, a free incision into the tunica vaginalis, and the filling of the cavity with carbolic or iodoform gauze to make it fill up by granulation, is also to be recommended (Bryant).

HÆMATOCELE.

Is an extravasation of blood into the tunica vaginalis. It may occur as the result of a blow, strain, or the tapping of a hydrocele, or it may arise without any assignable cause.

There is swelling of the part, which comes on immediately, or soon after the receipt of the injury. It resembles hydrocele as regards shape. At first the tumor is soft, and fluctuation may be detected, but when the blood coagulates it resembles in its character a solid growth. There is testicular pain on pressure. It is a non-transparent tumor, smooth and tense (Bryant).

Treatment.—In a recent case the first indications are to arrest the flow of blood and relieve pain. The recumbent position, with testicles raised, is necessary; the ice-bag and cold lotions must be applied. If the blood remains fluid for a long time, tapping may be performed. In chronic cases where there are signs of suppuration, a free incision should be made into the vaginal sac, and the cysts and clots turned out. Then will follow the usual treatment to promote healing by granulation (Bryant).

HYPERIDROSIS. (See Ephidrosis.)

HÆMIDROSIS.

Is an affection characterized by a flow of blood from the skin independent of any pre-existing lesion as a wound, abrasion or ulcer. The term literally signifies bloody sweat. Discharges of blood from wounds, abrasions and ulcers of the skin in connection with menstruation, are quite common; but cases in which the flow takes place without any lesions are exceedingly rare.

Causes.—The disease occurs most frequently in females, and in connection with amenorrhœa or defective menstruation, being in fact, a species of vicarious menstruation. It has been known to occur in infants and in adult males. It has been supposed that the hemorrhage is due to debility and deterioration of the blood.

Treatment.—When the disease occurs in females in connection with the anomalies of menstruation, these must be corrected by the usual means. The abstraction of blood, local and general, is likely to prove serviceable and to stop the discharge. If the hemorrhage seems to be due to debility, a nourishing diet, stimulants and tonics are indicated (Anderson).

HODGKIN'S DISEASE. (See Lymphadenoma).**HYMEN.** (Imperforate and Rigid).

Imperforate hymen is a condition to be recognized and not confused with adherent labia. The hymen is more deeply placed and nearer the orifice of the vagina. When imperforate, it causes retention of the menses, the accumulation of the secretions, and a pelvic tumor usually accompanied by periodic pain and constitutional disturbance (Bryant).

Treatment.—Division of the imperforate membrane, or its complete excision to allow of the free escape of the secretions which are usually black, is the proper treatment (Bryant). A rigid hymen is occasionally an impediment to coitus in women who marry late in life; and Thomas Bryant has been called upon on one occasion to divide the hymen of a lady about thirty who had been married for some months and had never had complete connection.

HYPOSPADIAS.

Is a malformation in which the canal of the urethra, instead of opening at the apex of the glans, terminates at the base or beneath the penis. It is a congenital deformity and is due to an arrest of development of a portion of the lower wall of the urethra. Hypospadias is much more common than epispadias. In examining sixty thousand conscripts, Marchal did not find a single case of epispadias; but among three thousand conscripts ten cases of hypospadias were found. Hypospadias may occur at any point in front of the membranous urethra, but is more frequently confined to the glans penis. The only disturbances caused by hypospadias are functional. The patient may not be able to pass water without wetting himself, and if the opening is too low in the canal he may be impotent (Keyes).

Treatment.—Simple hypospadias rarely calls for surgical interference, and hypospadias of the glans penis is unimportant. The operations which have been performed for its relief are not very encouraging in their results (Keyes).

HEAD INJURIES.

Most are *regional* *external* *initial*. They may be followed by *erysipela*, *inflammation* and *suppuration*.

Treatment.—They should be *cleansed* as *soon* with *edges* *carefully* *cleansed*. Care should be taken to wash away all foreign bodies and close with *bichloride* of *mercury* solution and a *syringe*. No part of the scalp however torn should be cut away. The patient should be confined to bed or to the house, purged and put on a milk diet. The hemorrhage from small vessels is usually controlled by closing the wound and using pressure: larger vessels must be tied (Bryant).

Caution.—Every scalp wound should be carefully examined with the finger and probe, to ascertain whether or not fracture of the skull exists. If suppuration occurs as indicated by rigors, chills, dry tongue, with increase of swelling and throbbing pain, the adhesions must be separated and pus let out (Bryant).

HORNS.

While horns occur normally on the heads of many of the lower animals, they are rarely met with in man.

Causes.—We know very little with regard to the causes which induce them. It is probable that in many cases at least local irritation has something to do with their production.

Situation.—They are most commonly met with on the head and face, although any part may be implicated. They are more common in females, and are usually seen in persons who have passed middle life. Usually they are solitary, but occasionally multiple. Botge has reported the case of a girl aged 19 who had a horn close to the navel about six inches in length, while on the right labium there was one but a trifle shorter. The most remarkable case is that of a Mexican porter who had a horn on the upper and lateral part of his head which was fourteen inches in circumference around its shaft and divided above that point into three branches. Horns spring from the mucous layer of the epidermis and are composed entirely of epidermic cells.

Color.—Horns are usually grayish, yellowish or brownish in color. They grow slowly, years often elapsing before they attain

their full size. The horns themselves are quite insensitive, but by pressure may give rise to pain. Sometimes the skin at their base inflames and suppurates and they fall off; but they are apt to recur (Anderson).

Treatment.—Consists in tearing out the horn after softening it with poultices, but in order to prevent its return, it is desirable to cut out the piece of skin from which it grows, or to cauterize the bases freely with chloride of zinc or caustic potash (Anderson).

HERNIA.

Called also rupture, is the protrusion of any viscus from its natural or containing cavity. Rupture is the wrong term, as there is no rupture of the peritoneum; it simply forms a sac or one of the coverings. It includes herniæ of the brain, testicle, lung, and mostly of the alimentary canal.

Reasons for Studying Hernia.—1. Because of its frequency; one person in eight is affected with hernia. 2. Because of the effects of the presence of hernia: (a) the individual cannot enter the army or navy; (b) he must pay a higher life insurance; (c) he cannot enjoy the privileges of charity; (d) he is deprived of many pleasures.

Classification.—There are ten varieties, five above the linea ilio pectinea, and five below that line. The five above are called abdominal and are: 1. *Diaphragmatic*. 2. *Ventral*. 3. *Umbilical*. 4. *Inguinal*. 5. *Femoral*. The five below are called pelvic and are: 1. *Obturator*. 2. *Ischiatic*. 3. *Vaginal*. 4. *Pudendal*. 5. *Perineal*.

The Component Parts of a Hernia are: 1. *Coverings*. 2. *Sac*. 3. *Contents*. The coverings of a hernia vary according to the variety and situation. The skin, fascia, muscle, subperitoneal tissue, and peritoneum cover all herniæ. The sac always consists of peritoneum. It undergoes changes and may be thin or very thick. The sac is divided into different parts: 1. *Mouth*. 2. *Neck*. 3. *Body*. 4. *Fundus*. The mouth is the opening between the cavity and the sac. The neck is the narrow constricted portion close to the mouth. The body is the part below the neck. The fundus is the largest portion of the body. Three

kinds of adhesions exist: 1. Adhesions of the guts to each other. 2. Adhesions of the guts to the sac. 3. Adhesions of the sac to the external coverings. The contents of the sac may be the ileum, colon, sigmoid flexure, or cæcum. Every viscus except the pancreas has been found in the sac. Fluid is found in the sac, from one ounce to a pint. The fluid is secreted from the sac, and is generally clear, but is bloody in inflamed hernia.

A hernia is named by adding "ocele" to the name of the body contained, or may be named according to situation.

Causes. 1. *Predisposing.* 2. *Exciting.* - *Predisposing causes are:* hereditary conformation of the parts, 34 per cent. are of these, 12 per cent. of which are in the first year; structural defects, as large inguinal rings, lax peritoneum, low attachment of the mesentary, wounds and abscesses and sudden emaciation after great corpulence.

Exciting Causes are: forced action of the diaphragmatic and abdominal muscles, as in straining at stool, lifting heavy weights, vomiting, crying, coughing in pneumonia or bronchitis; distension of the alimentary canal; certain forms of violent exercise, as horse back riding without stirrups; sailors pulling at ropes, and persons riding bicycles.

Signs and Symptoms.—*By inspection,* we observe: a tumor at a hernial opening; a tumor increasing and diminishing in size and weight in the upright and recumbent position; and a tumor with healthy skin over it.

By examination, we find that the tumor is reduced by taxis and returns on coughing; that the tumor has an impulse on coughing (unless strangulated); that the tumor may be hard, resisting, lobulated as in epiplocele, or soft, elastic and smooth if an enterocele.

By inquiry, we learn that the tumor suddenly appeared from above and never from below; that the tumor is not painful, but is uncomfortable; that the tumor is often associated with intestinal disturbance.

Diagnosis.—Make the patient stand before you with his back to a table and lean backwards. If in bed make him lie with a pillow under his nates. Note if the tumor is connected with the ring. Place a finger in the ring, through the scrotum, and ask

patient to cough; you will feel an impulse on the end of your finger. In women, feel for the spine of the pubes and pass your finger up a little. In femoral hernia, feel for pulsation of the femoral artery and ask the patient to cough. Inquire into the history of the patient. See if the tumor is fixed or movable. Percuss the tumor and if intestinal it will be tympanitic, if epiplocele dull, if solid, flat. Hernia is not transparent. A hydrocele will transmit light unless it contains blood or gut and then it is opaque. In hernia only there will be an impulse on coughing.

Treatment of Ordinary Reducible Hernia. Place the hernia back into its proper cavity and prevent its return by a truss. A truss should be used and the following points observed: 1. Notice the spring—have it not too weak or not too strong; 2. Notice the pad, it should be covered with kid to prevent irritation to the integument; 3. Use a rubber truss in bathing. Put the truss on while the patient is lying down, as in going to bed at night and rising in the morning. Hernia should be kept back all the time, and the patient should never go without a truss. Prof. Dennis has never seen a hernia which he could not keep back with a truss. You should never guarantee a cure by a truss, but the younger the patient, the more likely is he to be cured by the use of a truss. The neck of the sac contracts and the mouth puckers up. There is danger in wearing a truss which does not fit properly. Never allow the hernia to be pressed. Never allow constipation to exist in hernia.

Pathological Conditions.—There are certain pathological conditions which distinguish herniæ, as 1. Irreducible; 2. Incarcerated; 3, Inflamed; 4, Strangulated.

An Irreducible Hernia is caused by adhesions, by the nature of the protrusion, by the shape of the hernia (hour-glass), or by contraction of the ring, or of the abdomen. The symptoms are the same as in reducible hernia. The tumor cannot be made to go back into the cavity. This form of hernia gives rise to colicky pains, intestinal derangement, and is liable to strangulation. As to treatment, the patient should be carefully watched. Let him wear a concave pad truss. The bowels should be moved daily.

Give calomel, or iodide of potassium, to reduce the fat of the patient, and if then the hernia can be reduced, use a truss.

An Incarcerated Hernia is an obstruction in the protrusive parts by fluid, solid or gaseous contents. The causes are diarrhœa, and faulty digestion with flatulence. This form is usually found in elderly people. The signs are pain with an increase in the size of the tumor; a certain degree of fullness; no heat, tenderness, or tension. The symptoms are eructation of gas, but seldom vomiting; no circumscribed peritonitis; little or no pyrexia. As to treatment, employ gentle taxis, and as this is being done, pull the tumor gently from the ring. Apply hot and cold applications alternately. Give an enema high up in the bowels of warm water, castile soap and glycerine.

An inflamed hernia is an inflammatory condition of the gut or the sac. The causes are external violence, pressure of a badly fitting truss, local inflammation of the intestine, or of the omentum. The signs are pain with no enlargement of the tumor, a certain degree of hardness, heat, tenderness and tension. The symptoms are, slight but not continuous vomiting, simply the contents of the stomach; circumscribed peritonitis radiating from the body and neck of the sac; considerable pyrexia. As to treatment, suspend the tumor and apply local applications to produce warmth and heat to the sac. Apply opium and lead wash to the parts. Perfect rest to the bowel should be insured. Internally, give opium to relieve peristalsis and pain.

A strangulated hernia is where the sac or contents are so tightly constricted that they cannot be returned to the cavity, and where circulation is arrested. There are two varieties, active and passive. The active is where the sac is suddenly enlarged, or the contents become strangulated with their first descent. The passive becomes suddenly enlarged by the descent of more intestine or omentum, gas, fluid or solid into the sac. Strangulated hernia occurs most frequently in damp weather. The depression or shock is due to the sympathetic nervous system and not to the cerebro-spinal. It simulates cholera. In all cases of severe, sudden illness, look for a strangulated hernia.

The Local Signs are a tumor which has either never appeared before, or if it has, is now increased in size; a tumor which is very painful, especially to touch, and is irreducible; a tumor which has lost its impulse on coughing.

The Constitutional Symptoms are obstruction in the intestine with beginning symptoms of circumscribed peritonitis; uncontrollable vomiting stercoraceous in character, with colicky pains radiating toward the umbilicus; small, quick, pulse associated with great nervous prostration. A movement from the bowels may take place in strangulated hernia.

The Structural Changes are as follows: The intestine becomes first congested, then bright red, then mahogany brown, then ashen gray, then purulent, and then fibro-purulent. The sac becomes inflamed and has a crackling sound and feel which denotes gangrene.

The Treatment of strangulated hernia admits of no delay. Relieve the stricture and return the gut to the cavity if it is healthy. Before you employ taxis, give a hypodermic injection of sulphate of morphine (in and around the ring) to produce quiet and relaxation of the parts. Use a warm bath to relax the abdominal muscles, and the hernia may be reduced while in the bath. This bath is indicated in the active variety only. Venesection may be used to produce fainting, to relax the abdominal muscles, but this is not advisable because danger may result. Elevate the feet so as to employ gravitation toward the abdomen. Use aspiration in a tympanitic gut to allow the gas to escape. It should never be employed where the hernia is of more than one or two hours standing.

In taxis the surgeon must overcome all resistance—flex the legs and relax all the muscles. Invert the patient if the hernia has just happened.

Operation.—Operate at once if taxis has been employed by other surgeons; the sooner the better. Employ taxis just before the patient goes under the anæsthetic. There are four stages in the operation: 1. Exposure of the sac; 2. Opening the sac; 3. Division of the stricture; 4. Management of the hernia after exposure.

The incision should begin above the external abdominal ring one inch, and go to the bottom of the scrotum. Make the line of incision over the mesial line of the tumor. Cut through the skin first then the fascia. Look out next for three vessels, viz: circumflex iliac, external pudic and epigastric. Next cut through the external oblique, the internal oblique, cremaster and dartos.

The peritonæum is recognized by its rough cellular appearance, by its adhesions to surrounding parts, by having no blood vessels upon it, and by its bluish color and transparency. The intestine can be seen under it. Open the sac at its lower end by taking it up between forceps. A fluid will first appear which is normal. Pass a director into the opening and it will move about freely in the cavity. Next introduce the finger into the sac, the finger having been immersed in a bichloride of mercury solution. Cut on the finger to open the sac. Then divide the stricture at once, and examine the gut afterward. There are three points where strictures may be situated, at the first ring, neck of the sac, or within the sac. But generally it is at the ring.

Protect the gut. Introduce a grooved director into the ring and divide the stricture on the director. If the hernia is at the abdominal rings, cut upward and inward toward the umbilicus. If at the umbilicus cut toward the spleen. If at the femoral ring cut inward.

Do not put back gut that is gangrenous, and do not leave out healthy gut. Examine it carefully, pull it down to see how much of a stricture there has been, and how much damage is done by the stricture. Note the color of the gut. If it is bright red and elastic, it is healthy and can go back. If reddish brown or black, take the thumb and index finger and pinch the gut a little, hold for a few seconds and let go to see if the blood comes back again to the part. If so it is healthy. If the gut is ashen-gray, collapsed, and has a cadaverous odor, it is not in a condition to go back. If the gut is right to return, take the thumb and index finger and push it back little by little beginning at the ring. In gangrenous gut, let it slough in the wound; because the patient is in collapse, and the gut is inflamed, engorged and not in a proper condition to go back, and the sac is septic, and the

gut may retract and then nature has to restore the gut. If this method fails then later on do resection open the wound and bring together the healthy ends of the gut. Keep the parts warm. Give the patient morphine to keep the intestine quiet. Do not give, however, more than two or three doses. Give no food for several days, and then begin nourishment with peptonized milk. Give small pieces of ice to quench thirst. Move the bowels with enema of olive oil, warm water and soap. Do not use purgatives or cathartics. The abdomen may be opened and the gut relieved when obstructed with anything in the way of fæces. When the gut cannot be put back with safety, use the following treatment: Opium, cracked ice, and milk diet. Apply warmth to the sac. Let the gut slough and be drawn back into the cavity as nature may direct. If the peritoneum has adhered to the stricture treat it as best you can.

Different Kinds of Hernia.

I. Diaphragmatic.—Is a congenital hernia in which there is a fissure in the diaphragm. When the opening or rent in the diaphragm is caused by malformation, or the arrest of development, it is a fatal condition. It may be caused by traumatism, as the fracture of a rib, or other injuries, or by the intestine going through a natural opening in the diaphragm, on the left side because the liver is on the right.

Treatment—The first kind is fatal. The second may be operated and sewed up. The third demands no treatment.

II. Ventral.—Is a hernia anywhere in the abdominal wall, except at a hernial opening, as between the recti muscles, between the ossa innominata, between the linea alba and the linea semilunaris, and as the result of traumatism. Strangulation never takes place in hernia due to traumatism. It usually follows laparotomy.

Treatment.—If the hernia is great cut in and stitch the peritoneum first and then the soft parts over it.

III. Umbilical.—Is a hernia where the cord is tied. It is caused by a malformation and comes in early life. It is also caused by the exertion of the infant. One kind may be situated above the umbilicus in the adult and not in it.

Treatment—In children treat the hernia with a truss and one suitable for the purpose. In adults, a hernia above the umbilicus is dangerous and is liable to strangulation. If this occurs the patient is most certain to die. If the patient does not die, he will have indigestion, which must be distinguished from acute indigestion and can be by persistent vomiting in hernia. It occurs four times in the female to once in the male.

IV. Inguinal. Varieties. 1. Indirect inguinal hernia, or external, is one that goes through the inguinal canal. 2. Direct inguinal hernia, or internal, is one that makes its way directly through the external ring without having passed down the inguinal canal. When the protrusion takes place above Poupart's ligament, through the intestinal ring, but does not traverse the canal sufficiently far to appear through the external ring, the hernia is called a *lumbocoele*. Indirect inguinal is also called oblique inguinal hernia.

Occurrence.—Three-fourths of all cases of inguinal hernia are on the right side of the body, because the liver is pressing above, and the root of the mesentery is lower down on that side, and most persons are right handed. It is more common in males than in females, because the rings are larger. Out of every 100 cases of hernia, 84 are inguinal, 10 femoral, and 5 umbilical. When an inguinal hernia protrudes through the external ring into the scrotum, it is called a scrotal hernia. The tissues that cover in a hernial sac will necessarily depend upon the seat of the hernia.

The treatment is the same as in other hernia.

V. Femoral. Is a hernia below Poupart's ligament, the protrusion having come down through the crural ring on the inner side of the sheath of the femoral vessels. It does not appear at birth, nor in early life—about twenty years of age. It is more frequent in women than in men, because Poupart's ligament is longer and weaker, and the pelvis is wider in women. The neck of the sac appears beneath Poupart's ligament and the fundus rolls up over it.

Treatment.—Femoral hernia requires an immediate operation. The neck of the sac is surrounded by ligamentous tissue which is unyielding and the danger is great.

VI. Obturator.—Is a hernia which comes out through the obturator foramen. It is most frequent in females on account of the greater inclination of the pelvis.

Signs and Symptoms. There is a tumor at the inner side of the thigh and femoral vessels. There is pain in the knee joint owing to pressure of the tumor on the obturator nerve, and the pain is increased by extending the leg, and by rotating the thigh outwards. Other signs are the same as in any other hernia.

Treatment. Gentle taxis is generally sufficient. It often becomes strangulated.

VII. Ischiatic. Is a hernia which comes out through the ischiatic notch, above or below the pyriform muscle, and under cover of the gluteus maximus.

Symptoms.—Same as in any other hernia with one extra—a tumor found on a line drawn from the trochanter major to the sacro-iliac synchondrosis.

Treatment. Careful taxis. If strangulated operate.

VIII. Vaginal. Is a protrusion at the upper and posterior part of the vagina. It comes usually after parturition.

Symptoms.—Has all the signs of inguinal hernia and an impulse on coughing. It is a smooth, soft tumor increasing in the upright and decreasing in the recumbent position. It causes tenesmus and cystitis. It is reduced by taxis.

Diagnosis. It may be mistaken for cystocele. The diagnosis is made by introducing a male sound. It does not become strangulated.

Treatment.—It is easily reduced and kept back by a ring pessary. It should be reduced before labor.

IX. Pudendal.—Begins like vaginal. Comes out between the vagina and the levator ani muscle, lies in the long axis of the vagina, presents at the side of the ascending ramus of the ischium.

Treatment. It is easily reduced and kept back by a truss.

X. Perineal.—Is a hernia between the rectum and bladder in the male, or between the rectum and vagina in the female. It is more frequent in the female on account of a greater pelvis.

Signs.—Are the ordinary ones. It forms a tumor between the tuber ischii, which increases in size when standing.

Treatment.—Use a special perineal truss after reducing it.

Tumors Which Are Confounded with Hernia.—1. *Hydrocele*, 2. *Spermatocele*, 3. *Hamatocele*, 4. *Varicocele*, 5. *Undescended Testicle*, 6. *Solid Tumor of Testicle*, 7. *Abscess*.

I. Hydrocele. -

Signs. 1. Slow growth from below upwards. 2. It has a tense elastic feel. 3. Transparency. 4. Absence of impulse on coughing.

II. Spermatocele.

Signs. 1. Situated above the testicle. 2. Notched appearance from pressure on the cord. 3. Marked mental effect. 4. Spermatozoa seen under the microscope.

III. Hamatocele. -

Signs. Sudden growth following traumatism. 2. Soft fluctuating feel. 3. Eechymosis of scrotum, pain and tenderness. 4. Irreducibility.

IV. Varicocele. -

Signs. 1. Slow growth from below upwards. 2. Feels similar to a bag of worms. 3. Reducible, but will return with pressure over ring. 4. It does not involve the spermatic cord.

V. Undescended Testicle.

Signs. 1. Testicular sensation. 2. Pain upon pressure. 3. Absence of a testicle in the scrotum. 4. Absence of an impulse on coughing.

VI. Tumor of Testicle.

Signs. 1. Circumscribed size. 2. Doughy, lobulated feel. 3. Constant situation below inguinal canal. 4. Absence of an impulse on coughing.

VII. Abscess.

Signs. —1. Sense of fluctuation. 2. Inflamed integument. 3. Returns without a gurgle. 4. Peculiar impulse on coughing.

HYDRONEPHROSIS.

Called, also, dropsy of the kidney, consists of an accumulation of urine and dilatation of the pelvis and calices, with progressive atrophy of the renal structure (Bartholow).

Causes. It is caused by some obstruction in the urinary passages. The obstruction may be seated in the bladder, pelvis,

ureter, bladder, or urethra. It is usually unilateral. It may be congenital or acquired. *Congenital causes* are: 1. A supernumerary renal artery compressing the ureter. 2. Narrowing of the lumen of the ureter. 3. A valve-like impediment produced by an oblique insertion of the ureter into the pelvis of the kidney. 4. Insertion of the ureter into the upper, instead of the lower part of the pelvis. The congenital is often associated with malformations of other parts, as imperforate anus, hare-lip, etc.

The acquired causes are: 1. The ureter may be blocked by a calculus, by coagula of blood, or by parasites. 2. Diseases of the walls of the ureters. 3. Pressure upon the ureter from without, by a tumor, by a displaced uterus, etc. 4. Diseases of the bladder which involve one or both of the orifices of the ureters. 5. Stricture and hypertrophy of the prostate (Bartholow, Loomis and Flint).

Symptoms.—An important diagnostic sign is the discovery of a tumor in the lumbar region. The tumor is fluctuating and usually lobulated. It causes no pain except by its pressure. In growing, adhesions form which give rise to acute stabbing pains at the time of their formation. If the tumor presses upon the colon, constipation results; if upon the diaphragm, dyspnoea will result; if upon the stomach, there will be nausea and vomiting; if the tumor rests upon the abdominal aorta, a pulsation will be communicated to it. A symptom of almost pathognomonic value is the disappearance of the tumor coincident with the discharge of a large quantity of pale liquid by the bladder. The course of the disease is chronic, and the formation of the tumor slow (Bartholow, Loomis and Flint).

Differential Diagnosis.—Hydronephrosis may be confounded with ovarian cysts, ascites, hydatid cysts and pyonephrosis. In ovarian cysts, the tumor develops from below. Vaginal and rectal examinations will aid. In ascites, when the position of the patient is changed there is a change in the level of dullness, which never occurs in hydronephrosis. It cannot be distinguished from hydatid cysts unless hydatid vessels are found in the urine. It is distinguished from pyonephrosis by a non-purulent character of the urine, and by the absence of constitutional symptoms.

Treatment.—Remove the cause of obstruction if possible.

Removal of the liquid by aspiration has proved successful. A small aspirating needle or trocar should be used. Free opening and drainage is a favorable surgical procedure. Medicine will accomplish nothing.

HYDROPHOBIA.

Called, also, rabies, is a specific disease due to the inoculation of a poison contained in the saliva of rabid animals, notably the dog, and characterized by pain and stiffness of the inoculated part; by exaltation of the reflex faculty, by spasms of the throat on the attempts to swallow, and subsequently at the sight of liquids; by delirium, exhaustion and death (Bartholow).

Causes. The inoculation of man with a specific virus contained in the saliva of the dog, cat, wolf, fox, and some other rabid animals, is the sole cause of the disease. A certain predisposition seems necessary, for, of all persons bitten by rabid animals, only a small proportion are attacked by hydrophobia. The teeth, in inflicting the wound, pass through the clothing, which removes the saliva, and therefore the most of those bitten through the clothing escape infection. All ages and both sexes are liable. Apprehension, fear, excesses of all kinds, fatigue, etc., favor the occurrence of the disease (Bartholow).

Symptoms.—The period of incubation varies from a few days to several months or even years. During the invasion of the disease if the wound has not healed, it takes on a livid appearance, and becomes painful; if it has healed, the scar becomes red, irritable, swollen and painful. Sometimes a sensation of coldness and of numbness is felt in the bitten member. These local symptoms are soon followed by systemic disturbances. The patient is depressed, apprehensive, melancholic and peevish. The first is called the melancholic stage. There may be slight constriction of the throat, and difficult swallowing. These symptoms increase in severity for two or three days, when the patient passes into the convulsive stage. In this stage, there is great restlessness, the eyes have a wild look, are bright, staring, and constantly moving. The mouth and throat are dry, congested, and covered with thick, tenacious saliva which gathers about the lips in frothy masses.

Thirst is intense, but the patient cannot drink. The sight of water, or the thought of drinking brings on violent spasms of the muscles of deglutition and respiration. There is intense hyperæsthesia, and convulsions follow attempts at drinking. In rare cases there is a paraplegic stage. The hawking and spitting of the patient seems like the bark of a dog. Patients often become violent.

Duration.—Hydrophobia is a very acute disease. The whole duration of the disease is comprehended in three days to two weeks (Bartholow and Loomis).

Prognosis.—Is most unfavorable.

Treatment.—When the bite of a rabid animal has been received, the wound should be scarified, cauterized with a hot iron, or every part of it touched with nitrate of silver. Permanganate of potassium should be tried. There is no specific to prevent the disease, unless Pasteur's inoculations with the modified virus, have this power. Of all the remedies proposed, curare is the only one which seems to possess any power over hydrophobia. One-third grain should be given every fifteen minutes (Bartholow and Loomis).

ICHTHYOSIS.

Called, also, fish-skin disease, is a rare malady. It is not so much a disease as a deformity.

Causes.—The cause is unknown.

Symptoms. There is excessive proliferation of the cells of the epidermis. The skin is thickened, dry, coarse, wrinkled, and discolored. There is defective action of the sudoriparous and sebaceous glands. The scales resemble those of a fish (Anderson).

Treatment.—A long course of arsenic is useful. The hypodermic injection of $\frac{1}{4}$ of a grain of pilocarpine may be used from time to time. The local treatment consists in the frequent use of baths. Oily substances may be applied to the skin to keep it soft (Anderson).

PRESCRIPTIONS FOR ICHTHYOSIS.

- ℞ Cupri sulphatis.....gr. x.
 Unguenti sambuci℥j.—M.
 Sig.: Use locally. —Wilson.
- ℞ Pulv. camphorægr. x.
 Ungt. zinci oxidi.....℥j.—M.
 Ft. Ungt.
 Sig.: Use locally. —Erasmus Wilson.
- ℞ Ulmi corticis.....℥iiss.
 Aquæ bullientis.....Oj.—M.
 Ft. haustus.
 Sig.: A wineglassful or two thrice daily. —Lettson.

IMPETIGO.

Is an acute pustular, inflammatory cutaneous disease. It is the pustular form of eczema. (See eczema.)

Treatment.—The glycerite of tannin is an excellent application for impetigo. Skin-diseases, as impetigo and ecthyma, usually arising from a feeble state of the assimilative function, are cured by quinine. Nitric and nitro-hydrochloric acids have been used with advantage for the cure of impetigo, when dependent upon indigestion (Bartholow).

PRESCRIPTIONS FOR IMPETIGO.

- ℞ Plumbi acetatis.....gr. xv.
 Acidi hydrocyan dil℥xx.
 Alcoholis.....℥ss.
 Aquæ.....℥vss.—M.
 Sig.: Apply locally. —Bartholow.
- ℞ Zinci oxidi.....℥ij.
 Glycerinæ.....℥ij.
 Liq. plumbi subacetatis.....℥iss.
 Aquæ calcis.....ad.....℥vj.—M.
 Sig.: Apply locally. —Fox.
- ℞ Unguenti zinci oxidi.℥j.
 Sig.: Apply locally. —Ringer.
- ℞ Syrupi hypophosphiti comp.....℥vi.
 Sig.: A teaspoonful thrice daily in water. —Jamieson.

INDIGESTION. (See Dyspepsia).**INFLAMMATION.**

Is that nutritive disturbance which is characterized by active hyperæmia or congestion, and active multiplication or proliferation of the cells of a tissue or organ (Gross).

Causes.—Are predisposing and exciting. The predisposing are gout, syphilis, scrofula, shock, loss of blood, impaired nervous action, bad habits, diabetes, anæmia, etc. The exciting causes are cold or heat, injuries, acid or alkalies, parasites, and the results of the ptomaines of micro-organisms on the tissues.

Symptoms.—A part is acutely inflamed when it is hot, red, swollen and painful. The local symptoms are: 1. Redness, which is caused by an afflux of blood to the part. Redness is not always a sign of inflammation, unless it be permanent. 2. Heat, which is always present, and is due to an increased flow of blood to friction against the walls of the vessels of the part and to cell proliferation. The inflamed part is a heat-producing area, thus causing fever by overheating the blood. 3. Swelling, which is due to capillary engorgement, and effusion of serum into the tissues. The swelling is greater where the tissues are lax. And 4. Pain, which is usually felt at the seat of the morbid action. Pain sometimes suddenly leaves a part, which is a sign of commencing mortification. The causes of pain, are compression, stretching, irritation and disorganization of nerves. Its character varies; it may be sharp and lancinating, as in inflammation of serous membranes; acute and throbbing, as in formation of pus; dull and heavy, as in periostitis; annoying, as in toothache; sickening, as inflammation of the testes, itching, as in affections of the skin; or burning and scalding, as in gonorrhœa. The pain in inflammation comes on gradually, is persistent, aggravated by pressure and muscular contraction, and is fixed; there is febrile disturbance, accompanied by redness, heat and swelling. The pain of spasm comes on suddenly, is intermittent, relieved by pressure; is not fixed, there is no fever, and is not accompanied by redness, heat or swelling. The of pain neuralgia is paroxysmal, is

aggravated by pressure, is not fixed, and is unaccompanied by fever, redness, heat or swelling.

Constitutional Symptoms.—In mild cases there is no constitutional disturbance, but if the inflammation be at all severe, fever will follow. The fever is usually ushered in with a chill. The tongue becomes furred and unclean, there is great thirst, want of appetite, the bowels are constipated, the urine is scanty, the skin hot and dry, and the heart's action increased (Compend).

Products of Inflammation.—Are fibrin, serum, pus-cells and red blood-corpuscles. The first effect of the application of an inflammatory irritant is a dilatation of the arteries, then of the veins, and last of all, of the capillaries. At the same time the velocity of the blood-current is increased. After a time the blood flows less rapidly, and in the capillaries it may come to a complete stagnation or stasis. At this time the white corpuscles migrate from the veins and capillaries, but not from the arteries. The red corpuscles pass through the capillary walls by a process known as diapedesis (Flint).

Treatment.—Remove the exciting cause if possible. The general treatment is rest and elevation and relaxation of the affected part. The local treatment in the stage of congestion is bleeding. This may be effected by punctures, scarifications, leeching, or cupping. Leeches should not be put on the inflamed surface, but between the inflamed part and the heart. If it is desired to remove a leech after a certain time, this may be accomplished by sprinkling salt upon it. The bleeding may be stopped by applying to the part nitrate of silver, muriated tincture of iron, or styptic cotton. The flow of blood from a leech-bite may be continued by the application of warm water. The application of cold is frequently of service. It contracts the calibre of the capillaries. When the second stage, or that of effusion, is established, compression by bandages is useful. Acetate of lead is applicable to all cases of external inflammation (eight grains to an ounce of water). When the third stage, or that of suppuration, is reached, the application of heat and moisture by means of warm baths and poultices is the best.

Constitutional Treatment.—In strong, robust individuals,

blood-letting may be resorted to in the first stage of inflammation. Arterial sedatives such as tincture of veratrum viride, aconite root, gelsemium and tartar emetic are indicated in the first stage of inflammation. The diaphoretics in general use are acetate of ammonium, citrate of potassium, Dover's powders, fluid extract of jaborandi, muriate of pilocarpine and lemon juice with bicarbonate of potassium. The diuretics in use are infusion of digitalis, salts of potassium, citrate of caffeine, coffee, etc. Cathartics are used to evacuate the bowels, deplete the mucous membrane, and to stimulate the absorbents, and thereby remove the inflammatory deposit. Enemata of warm water, or soap and water may be used to unload the bowels. Emetics are indicated when the skin is hot and dry, the tongue heavily coated, and great weight in the epigastrium. Anodynes. —Opium is applicable to the treatment of inflammation in all stages of the disease. It should be preceded by a cathartic. It must be given in full doses, as small doses act as stimulants, while larger doses act as sedatives. Hypnotics. When the patient is restless, but not suffering acute pain, hypnotics are indicated, such as bromide of potassium gr. xxx., chloral gr. xx., taken at bedtime (Compend).

IMPOTENCE.

Is a symptom, and means inability to perform the act of coition. Impotence must be carefully distinguished from sterility, which signifies inability to beget offspring on account of defect in the semen, whether the individual can have sexual intercourse properly or not. A man may be impotent and virile, or impotent and sterile, or potent and sterile.

The sexual act is a compound one, physical and mental. The physical organs may be perfect and capable in their way; but if the mental are deficient in energy, or weakened by doubt of competency, or under the influence of some emotion such as shame or fear, the sexual act will be spoiled, and failure to complete it must ensue.

Impotence may involve absence of sexual desire, or it may exist without loss of sexual desire. Different persons in health differ widely as regards the venereal propensity; in some persons

the sexual desire is intense, in others it is feeble and sometimes wanting. The propensity may be increased by indulgence and diminished by an opposite course. In the marital relation coldness may depend on personal antipathy and is a frequent source of domestic unhappiness (Bryant and Flint).

Impotence may be considered as true and false. True impotence is exceedingly rare in the male.

Causes. 1. Absence of penis. 2. Minute size of penis is only a relative cause. 3. Extreme size of the penis is a relative cause. 4. Extreme epispadias and hypospadias. 5. Large size of the prepuce, tight and narrow orifice, tumors or growths upon or about the penis, and excess of abdominal fat. 6. Very tight stricture of the urethra. 7. Aspermatism. 8. Imperfect, irregular and bent erections. 9. Eunuchs. 10. Prolonged spermatorrhoea. 11. Partial erection, attended by rapid ejaculation, is a common variety of impotence, due usually to continence, over-excitement, etc. In this case, the patient should practice the sexual act in the early morning rather than the evening. Circumcision may sometimes be necessary to diminish the sensitiveness of the glans penis, which is often over-acute.

Treatment.—Remove the cause if possible.

FALSE IMPOTENCE.

Causes.—In false impotence, the cause is always nervous, or it may be a moral one; and there is often no impotence at all, except in the mind of the individual. Sexual indifference, as a result of sudden shock, grief, excessive joy, fright, repugnance and lack of affection for the individual, is a cause. Under the two latter circumstances the patient will sometimes think of another person than the one with whom he is lying, and thus maintain erection and effect ejaculation. The sudden flooding of the vagina with warm mucus will sometimes cause erection to cease at once. Rouband speaks of a man who became impotent on drawing a prize of thirty thousand francs in a lottery. The same author mentions another curious cause of false impotence: A young man brought up in the country was, at the age of fourteen, initiated into the mysteries of Venus, by a young friend of

the family, twenty-one years old. Her hair was light, and worn in curls, and for precaution's sake, she never had intercourse with the boy except when dressed—that is, wearing a corset, high boots and a silk dress. A dark beauty had no power over him, and a night-dress extinguished all his fire. In after life, he found himself utterly impotent except in the company of a light haired woman, wearing curls, with high boots, a corset and a silk dress (Keyes).

Treatment.—It is necessary to arouse the moral sentiment of carnal desire by favorable relations to the sex—opera, theatre, etc. The power of the organs is increased by general dry friction of the whole body, by massage and flesh-brush, cold-bath, sea-bathing, generous diet, tonics, the mineral acids, strychnine, ergot, and especially phosphorus and cantharides, or the two combined, commencing at a fair dose, one-fortieth of a grain of the former to ten drops of the tincture of the latter, three or four hours before the desired erection, and increasing the dose carefully. Cantharides produces erection without desire, and phosphorus with desire. Electricity, and local applications of mustard are sometimes serviceable in recalling erection.

Nervous Impotence.—Is the most common form of false impotence. It occurs in young men. The patient can provoke erection at will and awakes with erection, but when in the presence of a woman, and when he desires to have sexual intercourse, his organs will not respond, or if erection comes on, it lacks full energy.

Causes.—This form of impotence is the result of unnatural excitement of the sexual functions. It may come from protracted chastity, ungratified desire, or excessive erotic excitement at the time. After prolonged chastity and great desire, the sufferer has probably approached a female, and at the portals of success his erection has failed him. The mental depression following an experience of this sort is of the most exaggerated nature. He thinks he is impotent beyond all doubt. The cunningly conceived advertisements of charlatans in newspapers envelop him further in deep despair. He is now without a ray of hope (Keyes).

Treatment.—The best treatment for a man with nervous im-

potence is to instruct him in sexual physiology and hygiene, and get him married, with the advice to attempt no intercourse, and awaiting some morning when awakening with a vigorous erection, to accomplish coitus promptly, without delay or dalliance. The act once accomplished the charm is broken. The use of the steel sound and of local applications of tannin, often of decided service where ejaculation is too rapid, are also sometimes useful here (Keyes).

PREScriptions FOR IMPOTENCE.

R Tinct sanguinariae.....ʒiij.
Ext. stillingie fld. ʒv.—M.
Sig.: Fifteen or twenty drops in water thrice daily.

—Bartholow.

R Zinci phosphidi.....gr. ij.
Confect rosiegr. xx.
Sig.: One to three pills three times daily.

—Bartholow.

R Ext. cannabis indicie
Ext. nucis vomicae....aa.....gr. xv.
Ext. ergotae aquosi ʒj.—M.
Ft. massa et in pil. no. xxx. div.
Sig.: A pill morning and evening.

—DaCosta.

R Tinct. phosphori ʒiss.
Tinct. cantharides ʒijss.
Elixir simplicis .. .ad .. ʒv.—M.
Sig.: One teaspoonful three or four hours before retiring. Increase dose carefully.

—Van Buren and Keyes

INCONTINENCE OF URINE. (See Enuresis).

INFLUENZA.

Called also epidemic catarrh, la grippe and catarrhal fever, is a specific epidemic disease, self-limited, characterized by catarrh of the respiratory organs, and sometimes of the digestive, and by nervous symptoms and debility (Bartholow). In 1830 and 1831 a severe influenza epidemic swept over the whole civilized world (Loomis).

Causes.—All conditions and all ages suffer alike. The disease has passed over the whole of Europe in six weeks. It rarely continues in one locality more than two months. The usual dur-

ation of an epidemic is two to four years. It seems to be due to some special morbid principle in the atmosphere (Loomis).

Symptoms.—Influenza comes on suddenly. A feeling of chilliness, flashes of heat, and a feeling of lassitude are followed by symptoms of a severe naso-pharyngeal catarrh, with frontal headache, pains in the limbs and back, soreness of the throat, hoarseness and a frequent racking cough, difficult breathing and constriction across the chest. The sputa are at first mucous and then scanty, later copious and muco-purulent. There is great prostration. Sudamina appear on the surface and herpes on the lips. There is anorexia. There may be nausea and vomiting. The face becomes congested and livid, the pulse increases, the tongue becomes dry and brown, and the temperature rises. In mild cases the disease is at its height on the third day. In severe cases, convalescence does not commence until the tenth or twelfth day (Loomis).

Prognosis. Is good except in the very old, very young, and the debilitated. Complications make the prognosis graver. The most frequent complications are laryngitis, bronchitis, pulmonary congestion, pneumonia and pleurisy. Herpes labialis occurs often (Loomis).

Treatment.—Repose in-doors, and at the outset a full dose of quinine and morphia (gr. xv. — gr. ss.) exercises a favorable influence. Also in the early stages, a half ounce of liquor ammonii acetatis, and one grain of pulvis ipecac, every two or three hours is all that is required. The bowels should be kept freely open with salines. If patients are restless, Dover's powders may be given in small doses. For the prostration give stimulants. For the local distress in nose and throat, inhale the vapor of hot water.

Bartholow gives the following:

R Extracti ipecacuanha fld 3ij.
Tinct opii deodoratæ 3iv.
Tinct aconiti radicans 3j —M.

Sig.: Six to ten drops every two hours. For the violent head symptoms bromide of potassium may be given.

(Loomis and Bartholow).

INGROWING TOE-NAIL.

This is a troublesome and painful affection. It occurs most frequently on the great toe.

Causes.—Tight narrow-soled shoes and boots. The pressure causes the nail to cut its way into the tissues, the tissues become hypertrophied and ulcerate, and granulations spring up from the side of the nail (Sayre).

Treatment.—Remove the exciting cause. In mild cases, insert a small piece of cotton or lint under the nail. After the application of the cotton, the granulations should be brushed over with nitric acid or nitrate of silver. Another plan of treatment is to cut a gutter in the center of the nail, which has a tendency, it is said, to elevate the corners. Still another plan is to divide the nail on a line with the incurved edge, and strip it off, together with the matrix (Sayre).

PRESCRIPTIONS FOR INGROWING TOE-NAIL.

R Liquor potassæ.....ʒij.
Aquæ.....ʒj.—M.

Sig.: Apply on cotton to the margin of the nail at the ulcerated surface to soften the nail. —Bartholow.

R Acidi tannici.....ʒj.
Aquæ destillatæ.....ʒvj.—M.

Sig.: Paint over parts daily. —Biall.

R Plumbi (pulv.) acetatis.....ʒj.
Tinct. opii.....ʒj.
Aquæad.....ʒviiij.—M.

Sig.: Shake well and apply constantly until the inflammation is reduced and pain alleviated. Then insert a pledget of cotton under nail, and apply following :

R Argenti nitratis.....gr. xxx.
Aquæ destillatæ.....ʒj.—M.

Sig.: Apply two or three times daily with a brush.—Davidson.

INSOMNIA.

Is sleeplessness. It occurs in cerebral congestion and inflammation. But a person may be sleepless from excessive pain, from exhaustion, from grief, from mental excitement or fatigue,

or from the free use of coffee or tea. In several of these states, congestion is the immediate cause of the wakefulness. Insomnia attends the delirium of typhoid fever, but is most marked in delirium tremens.

Treatment.—When wakefulness is due to a condition of cerebral anæmia, a full dose of some alcoholic fluid, whiskey or brandy, will produce sound and refreshing sleep. In some persons a glass of ale or beer answers better. Sulfonal in doses of 30 to 60 grains, causes sleep that is physiological in character, but pain hinders its action. Cases of sleeplessness, due to mental over-work, anxiety or physical fatigue are entirely relieved by fifteen to twenty grains of chloral. The bromide of potassium is effective in the same cases. Morphine and atropine is the best sleep-producer in cases of pain, in some kinds of mania, and in melancholia. A hop-pillow has induced sleep. Galvanization will sometimes cause sleep. A tepid or warm bath at bedtime will often produce sleep (Bartholow).

PRESCRIPTIONS FOR INSOMNIA.

- | | | | |
|-------|---|----------|--------------|
| R | Paraldehyde..... | 5iiss. | |
| | Alcoholis (90 per cent.)..... | 3iss. | |
| | Tinct. vanillæ..... | 5ss. | |
| | Aquæ..... | 3ij. | |
| | Syr. simplicis....ad..... | 3iv.—M. | |
| Sig.: | One or two teaspoonfuls every hour. | | —Yvon. |
| R | Ext. piscidiæ erythrin fld..... | 3j. | |
| | Syr. simplicis..... | 3j. | |
| | Aquæ auranti flor..... | 3iv.—M. | |
| Sig.: | A teaspoonful to a tablespoonful at bedtime. | | —Payne. |
| R | Antipyrin..... | 5j.-ij. | |
| | Syr. auranti cort | 3j. | |
| | Aquæ cinnamomi.....ad..... | 3iij.—M. | |
| Sig.: | One tablespoonful every hour or two till effective. | | —Williams. |
| R | Amyl hydratis..... | gr. xiv. | |
| | Syr. auranti cort..... | 3ss. | |
| | Aquæ..... | 3j.—M. | |
| Sig.: | Take at bedtime. | | —Von Mering. |

R Methylo3j.
Syr. auranti flor3iv.—M.

Sig.: One teaspoonful at bedtime. —Richardson.

R Potassii bromidi.....3iv.
Chloral hydratis..... 3ij.
Syr. pruni virgin.....3j.
Aque.....ad.....3iij.—M.

Sig.: A dessertspoonful in a glass of water at bedtime.

INTERMITTENT FEVER. (See Malarial Fever).

INTERTRIGO.

Is chafing of adjacent parts. It is a form of erythema. It occurs at parts where opposed surfaces of skin are in contact with one another, as between the hips, at the flexures of the thighs, in the arm-pits, and under pendulous mammae, the inflammation being favored by the heat, moisture, and friction of the parts. It is especially apt to occur in hot weather, in the case of corpulent persons, and in infants. The affected surface has a reddened glazed appearance and the itching is often intolerable (Anderson).

Treatment.—Violet powder is used to prevent intertrigo in infants. In intertrigo and in the erythema which occurs about the genitals of infants, dusting the affected surface with bismuth soothes the pain and promotes healing. Tannin in powder, or the glycerites of tannin, applied to the affected surface is very effective. The following lotion is useful:

R Aluminus gr. xx.
Zinci sulph... gr. x.
Glycerinae.....3j.
Aque rosae.....3iv.—M.

Sig.: Apply to affected surface. —Bartholow.

Camphor is a useful addition to dusting powder to allay the heat, tingling and itching of eczema and intertrigo (Ringer).

PRESCRIPTIONS FOR INTERTRIGO.

- ℞ Pulveris amyli.....ʒiv.
 Zinci oxidi.....ʒj.
 Zinci carbonatis.....ʒss.—M.
 Sig.: Use as a dusting powder. —Tilbury Fox.
- ℞ Acidi boracici.....ʒiss.
 Vaselini.....ʒj.—M.
 Sig.: Apply locally after washing and drying the parts.—Waring.
- ℞ Bismuthi subcarbonatis.....ʒij.
 Sig.: Use as a dusting powder. —Bartholow.
- ℞ Ammonii sulphoichthyolati.....gr. iij.
 Cumarini.....gr. xij.
 Unguenti petrolei.....ʒv.—M.
 Sig.: Apply with the finger after bathing and drying the child.
 —Lorens.
- ℞ Linimenti aquæ calcis.....ʒvi.
 Sig.: Use locally. —Tilbury Fox.

INTESTINAL CATARRH. (See Enteritis.)

ITCH. (See Scabies.)

INTUSSUSCEPTION. (See Intestinal Obstruction.)

INTESTINAL OBSTRUCTION.

Is a mechanical impediment to the movement of the bowels. It may be complete or incomplete.

Inquire of the patient: 1. If he has ever had a previous peritonitis, or intestinal troubles, as colic, pains, etc. 2. The manner in which the attack appeared, whether suddenly or gradually. 3. If there is any exciting cause present, as a hernia, swallowing a foreign body, etc. The obstruction may come on while the patient is asleep or in perfect health, or after an indigestible meal, or while straining at stool with a distended bladder. As certain as obstruction occurs in the small intestine, acute symptoms are developed, vomiting of bile comes on suddenly, and tympanites is absent generally. Collapse is profound. The shape of the abdomen is similar to the pregnant. If the obstruction occurs in the large intestine, chronic symptoms are

developed, and there is fixed pain, and tympanites with distension of the colon. Collapse is less profound. Great distension of the abdomen develops rapidly. It occurs late in life.

Causes.—*I. Strangulation inside of the cavity.*

II. Changes within the lumen of the gut.

III. Changes without the lumen of the gut.

The causes of strangulation of the bowels are: 1. Peritoneal adhesions by bands, over loops, through apertures, or attachment to the viscera, (the result of acute peritonitis). 2. False diverticulum. 3. Hernia. 4. Volvulus. 5. Intussusception. 6. Kinking of the gut.

The causes of changes without the lumen of the gut are: 1. Compression from anything outside of the gut. 2. Contraction of the mesentery following inflammation of the same. 3. Chronic peritonitis. 4. Retroflexed uterus especially during pregnancy.

The causes of changes within the lumen of the gut are: 1. Stenosis or stricture from malignant growths or ulcerations. 2. Gall stones. 3. Foreign bodies. 4. Enteroliths. 5. Faecal impaction.

False Diverticulum. May be the result of the viteline duct remaining pervious in the foetus, or of a small piece projecting from the ileum like the finger of a glove, from one to three feet above the ileo-caecal valve, or it may be formed from the mucous coat, by a rupture of the muscular coat, making a hernia of the mucous coat.

Hernia.—As a cause of intestinal obstruction, is formed by weakening of the walls of the intestine, and is found on the mesenteric borders of the gut. The cause may also be faecal matter. The pouch comes from the ileum three to four feet above the ileo-caecal valve.

Volvulus.—Is the twisting of the gut upon its own axis, or upon the mesenteric axis. It occurs most frequently in the ileum colon, caecum and sigmoid flexure. Thirty-three of 1000 cases are due to volvulus. Russians suffer more than other nationalities, because they have eight feet more of ileum, and eat a more vegetable diet. In the ileum it goes from left to right and once upon the mesenteric axis. It occurs at about twenty years of age. This variety comes on very suddenly, and with no assignable

cause. Give an enema early, and reach and distend the colon and percuss it, then you will know whether the obstruction is above the ileo-cæcal valve or below it. In the sigmoid flexure, it is very common in chronic constipation as the bowels become filled by fæcal matter and gas, and fall over each other. Generally occurs after middle life, after 40 years of age. Tenesmus is very distressing in the bowels. Volvulus may come from traumatism, as a stabbing into the abdomen; also, from active peristalsis when the gut twists upon itself.

Intussusception.—Is where one part of the bowel is thrust into another part. It is, also, called invagination. One-third of all cases of intestinal obstruction is of this kind. Twenty-five per cent. occur before the first year, and fifty per cent. before the tenth year. It most frequently occurs in the ileum, colon, ileo-cæcal valve, and rectum. It is caused by irregular contraction of the bowels, and has been produced on animals by electricity.

If there be an intermittent pain, it denotes that the obstruction is incomplete. If there be a continued pain it shows that the obstruction is complete. Bloody stools are seen in eighty per cent. of the cases.

Stenosis or Stricture from Malignant Growths or Ulcerations—is due to peptic, typhoid, tubercular, catarrhal, syphilitic and dysenteric ulcers. Peptic ulcer is found in the duodenum and is said to be due to the action of the gastric juice. It occurs in middle life. Typhoid ulcers are found in the long axis of the gut of the ileum. The tubercular ulcers are found in the lower ileum, and originate in the lymphatic glands, and lie in the transverse direction of the gut. Catarrhal ulcers are found in the colon, and are produced by chronic constipation. They are in large numbers and produce gangrene of the mucous membrane. Syphilitic ulcers are usually found in the rectum, in the submucous tissue, and are broken down gummata. Dysenteric ulcers are found in the rectum and sigmoid flexures. Stenosis from malignant growths are usually from carcinoma (epithelioma) and may be primary or secondary. It usually forms an annular stricture and there comes just above the stricture dilatation and hypertrophy of the bowel.

Gall Stones—Which produce obstruction are usually small but become enlarged when passing through the intestine by cohering together. The symptoms are not so sudden or great, as by bands or loops. There are previous hepatic colic, and the presence of jaundice usually. It is more frequent in women than in men.

Foreign Bodies—Are any bodies not acted upon by the gastric juice. These may be swallowed for suicide or by the insane or accidentally.

Enteroliths—Are intestinal calculi. They are composed of phosphorus, calcium, magnesium carbonate, with cholesterine, and are formed about a nucleus. This form of trouble is frequent in Scotland where the peasants live on coarse oatmeal.

Fæcal Impaction—Is due to the fæces which become hard and tend to remain in the bowel. The bowels move very seldom once in three or four weeks, and thus it is a cause of local obstruction. In all cases a tumor can be felt under the integument and the feeling is like that of putty. A bucketful of fæcal matter has been removed. It may lead to peritonitis. It is more common in women than in men. It may be relieved by mechanical means, but the patient may die from exhaustion.

Compression from anything outside of the Gut—May produce obstruction. It may be from sarcoma of pelvis. It may be from tumor of the kidneys or abscess connected with Pott's disease, or hydatid cysts of the liver, displaced spleen, etc. Contraction and inflammation of the gut may produce it. Chronic peritonitis and tubercular peritonitis with adhesions, retroflexed uterus, and enlarged tubes due to pregnancy may cause intestinal obstruction (Dennis).

Symptoms.—1. *Pain* which is very severe and is present early, is usually referred to the umbilicus, because near this are the great solar and mesenteric plexuses. The situation of the pain is no criterion to the situation of the obstruction in the early stages. Note that continuous pain denotes complete obstruction and paroxysmal pain denotes incomplete obstruction, and if the pain suddenly ceases it denotes gangrene. There is a localized peritonitis.

2. *Vomiting* comes on early when the obstruction is in the small intestine. The contents of the stomach are first ejected, then the biliary secretions, and last stercoraceous material about the fifth day. Vomiting usually occurs just after the pain, and when suddenly stopping, denotes gangrene.

3. *Constipation* is present and continuous. Bowels do not move above the constriction. Note the presence of blood in the stools. If there is blood, it is likely to be intussusception. The blood may come from hemorrhoids.

4. *Abdominal Tenderness* is important, but is absent at the beginning of the attack. It supervenes quickly, and appears about the third day, and is diagnostic as a symptom because it points to local peritonitis, and if it is diffused it denotes general peritonitis.

5. There is a tumor or swelling in the abdomen.

6. The pulse is thready and rapid, 110 to 140 per minute and small.

7. *Temperature* is subnormal, as a rule; if peritonitis sets in it may rise to 100° F., and if perforation takes place, it falls below normal to 97° F.

8. *Respirations* are more frequent, superficial and thoracic.

9. *Anuria*.—Urine is scanty and contains albumen and indican.

10. *Physiognomy* has a haggard expression from mental suffering, face is drawn, eyes are sunken, and the intellect is good to the end. Collapse finally comes on.

Caution.—Do not give cathartics, because they will intensify the pain, produce more vomiting, increase shock, produce strangulation, causing perforation and peritonitis. It may convert a chronic into an acute, and may induce intussusception. Metallic mercury is not much used and should not be till the last.

Symptoms of Perforation are:

1. *Emphysema* of the abdomen, which is sometimes due to a gunshot wound or some opening.

2. *Shock*, the patient is in collapse.

3. *Condition of the Pulse* is diagnostic, on account of heart disturbance due to perforation. It is rapid, thready and feeble.

4. *Tympanitic resonance* over the liver. There are two conditions of tympanites without perforation, namely: 1. When the colon is pushed up and is adherent to the walls; and 2. Emphysema of the lower lobe of the lung. The respirations are rapid and thoracic in character.

5. *Sudden tympanites* at the seat of perforation.
6. *Subnormal temperature.*
7. *Vomiting.*
8. *Sometimes bloody stools*, especially in traumatism.
9. *Retention of urine.*
10. *Acute peritonitis* and anxious physiognomy (Dennis).

Treatment.—Give morphine hypodermically. Small doses stimulate and large ones paralyze, therefore large doses and not small ones are indicated. It relieves intense pain, influences shock and relaxes the abdominal walls. It increases the secretion of urine, affects the pulse, respiration, temperature, and vomiting. It arrests peristalsis. *Caution.* If it is continued too long, retention of the bowels is produced, which is not good.

Nourishment.—We cannot nourish by way of the stomach, for it is filled with regurgitant fluid, and the intestines are filled with gas. Nourish by the rectum and give enema of milk (4 oz.). We may use hypodermics of brandy. Let the patient have ice in his mouth to quench his thirst. It will help to control vomiting and keep the tongue moist.

Local Applications.—Warm ones will relax the abdominal muscles. Turpentine stupes over the abdomen is good. Hot flannels and poultices are good. Place a pillow under the popliteal space.

Enemata.—Copious ones in intestinal obstruction are good. They must be introduced slowly. If a fountain syringe be used, it must be lower than six or seven feet for children, and lower than 15 to 18 feet for adults. Warm water with soap-suds and olive oil is good. If glycerine is added it will be better. Do not use the injection late in the disease, for gangrene will be produced.

Aspirations, or Paracentesis.—Should we aspirate or not? It is dangerous and must not be done only in extreme cases, and

then must not be done without consultation of some other surgeon.

Operation.—Laparotomy: Results are good when the operation is done early, and before the patient is exhausted, and before peritonitis sets in. Do not operate if there is suppuration with general peritonitis, or if the cause is some malignant disease. First, have the parts thoroughly cleansed with a warm solution of bichloride. In the cavity do not use a solution stronger than 1 to 10,000, and never use the same sponge twice. Always empty the bladder before the operation. Make the incision in the median line, and the higher we go above the umbilicus the worse it will be, for the gut cannot be easily returned. If the ileo-cæcal valve is collapsed the obstruction is in the small intestine and not in the large. If by bands strangulation is caused, cut the bands between the ligatures. If by a slit, through which the gut has gone, sew up the slit. If by a false diverticulum, cut it off, and bring the edges of peritoneum together, and let an adhesion form. If by hernia, cut out the damaged gut and make an artificial anus. If by volvulus, and it involves the ileum, simply untwist it, but if the sigmoid flexure is involved, do a left lumbar colotomy. If by intussusception, which occurs in childhood largely, and if it affects the small intestine, simply draw it out; if that cannot be done, make an artificial anus just above the obstruction. Do the operation early. If the obstruction is caused by stenosis from ulceration or malignant disease, do a laparotomy and remove the disease and make an artificial anus, then later on re-establish the contiguity of the gut. If by gallstones, open the gut and remove them or any other foreign bodies. If by faecal impaction, it may be removed by manipulation. If by growth or neoplasm, remove the growth if possible, and if not, open the gut. We have sarcoma of the pelvis, tumors of the kidneys, mesentery, omentum, and abscess of Pott's disease. In chronic peritonitis, wash out the cavity with bichloride solution 1 to 10,000. It is successful where there is tuberculous disease, but not in carcinoma. In contraction of the mesentery, do a laparotomy. If the obstruction is caused by retro-flexed uterus, bring it forward.

Laparotomy for Acute Intestinal Obstruction.—The results of laparotomy are encouraging. Before the days of aseptic and antiseptic surgery, the death rate was 75 per cent.; after that time 58 per cent. The percentage of deaths is due to two causes: 1. Shock. 2. Sepsis. Shock may be diminished by an early and rapid operation. Sepsis may be diminished by adhering strictly to aseptic and antiseptic surgery. If there is suppuration do not operate. Duration of life in acute obstruction of the intestines is six days; so operate early. If laparotomy is done and the cause removed, the per cent. of deaths is 56. If the cause is not removed the percentage of death is 66. If the gut is gangrenous, and is opened, and afterward sutured, the percentage of death is 86 (Dennis).

PRESCRIPTIONS FOR INTUSSUSCEPTION.

R *Fellis bovini* gr. xx.
Aqua ferventis Oij —M.

Sig: Inject slowly into the bowel until it is fully distended.
 (Knee-chest position is best) —Hawkins.

R *Lobelia* ʒss.
Aque bullientis Oj —M.

Sig: Inject one-fourth, or one-half, and repeat if necessary
 —Bartholow.

R *Extracti belladonnæ* gr. iv.
Aque ferventis Oj.—M.

Sig: Inject into the rectum. —Waring.

R *Sodii bicarbonatis* ʒj.
Aque ʒvj.—M.

Sig: Inject into the rectum and follow at once with.

R *Acidi tartarici pulv* gr. xxxv.
Aqua ʒiv.—M.

Sig: Inject into the bowel at once after the preceeding.
 —Bartholow.

IRITIS.

Is an inflammation of the iris.

Causes.—Are local and constitutional. It may come from functional strain, from injury, from operations, from penetration of foreign bodies or by extension of inflammation from adjacent

structures. The constitutional causes are syphilis, rheumatism and gout. About fifty per cent of all cases is caused by syphilis. Rheumatism and gout cause obstinate, painful and recurrent attacks of iritis. In syphilitic iritis, a plastic or gummy exudation is thrown out. Gonorrhœa occasionally causes iritis. Other causes are malaria, variola, scrofula, and tuberculosis (Noyes).

Symptoms.—Are objective and subjective. The former are change of color of the membrane, abnormal behavior of the pupil and injected blood vessels. A blue iris will change to a dull gray, a hazel to a dirty brown. The aqueous humor is turbid, and the pupil is smoky instead of a clear jet black. The pupil will be small and will not respond to light. Adhesions will become apparent upon dropping a solution of atropia into the eye. In severe cases, the whole front of the eye will be intensely red. The lids will be imperfectly opened. The subjective symptoms will be, impairment of sight, intolerance of light, and pain. The pain is first situated in the globe, and is a conspicuous feature from the outset, is most severe toward night, or early morning. Iritis may attack one eye or both. It generally lasts two to six weeks, if neglected it may continue for months, with entire loss of sight.

Sequelæ of Iritis are: 1. Adhesions of the iris to the capsule of the lens. 2. The exudation may become organized and fill the whole pupil, and thus resemble cataract. 3. The capsule of the lens may become thickened (Noyes).

Prognosis.—In simple cases, vision will be perfectly restored, but if adhesions take place, sight will be impaired (Noyes).

Treatment.—Avoid use of eyes, and all sources of irritation. The patient must be kept in a dark room. The essential and master remedy in iritis is a solution of atropine: it is the beginning, middle and end treatment. A solution of four grains to the ounce must be used and dropped in four to six times daily. If poisonous symptoms appear from the use of the atropine it must be stopped, and the proper treatment instituted. Applications of warm water to the eye are useful. For the nocturnal pain, hot fomentations are to be used, and morphia administered. Constitutional treatment will be necessary in cases of syphilitic, rheumatic, or gouty iritis. Gonorrhœal iritis demands urethral

treatment. For severe serous iritis with deep anterior chamber and much pain, paracentesis will be effectual. When mydriatics fail and the pupil is much bound down, iridectomy is the remedy (Noyes).

PRESCRIPTIONS FOR IRITIS.

R Atropinæ sulphatis.....gr. iv.
Aquæ destillatæ.....℥j.—M.

Sig.: A drop or two in the eye three times daily. Used with hot water, bathing for fifteen minutes every hour till pain is relieved.

—Chilton.

R Hydrargyri chlor. corros.....gr. j.
Potassii iodidi.....℥j.
Tinct. calumbæ.....℥ij.
Aquæ destillatæ.....ad℥vj.—M.

Sig.: A dessertspoonful in water three times daily. —Lawson.

R Scopolinægr. j.
Aquæ destillatæ.....℥j.—M.

Sig.: Two drops into the eye three times daily. —Dunn.

R Emplastri cantharidis1 in. by 1 in.

Sig.: Apply behind the ear, and poultice when blistered.

—Hartshorne.

R Duboisii sulphatis.....gr. j.
Aquæ destillatæ.....℥j.—M.

Sig.: One drop into the eye twice daily. —Tweedy.

ICTERUS. (See Jaundice).

INSOLATION. (See Heatstroke).

IODISM.

If iodine or the iodides are administered in too large doses, or to persons of irritable stomach, and for too long a time, they will produce gastro-enteric symptoms, headache, giddiness, marasmus, sometimes discoloration of the skin, occasionally salivation, and frequently a wasting of the mammæ and testicles. This train of symptoms is called iodism.

Treatment.—Withdraw the drug and give arsenic. Atropine is quite effective as a remedy for iodism (Bartholow).

IRRITABILITY.

Cause.—All those practices and habits which cause nervous strain, and result in nervous exhaustion, may produce irritability.

Treatment.—Give five grains of chloral two or three times a day in irritability with nervousness and restlessness. A sitzbath with the water between 60° and 80° greatly relieves fatigue, and soothes an irritable restless state of the nervous system.

ITCHING. (See Pruritis).

JAUNDICE.

Called also icterus, is a yellow discoloration of the skin due to the presence of bile or blood pigment (Loomis). Jaundice is a symptom common to many affections of the liver.

Causes.—*I. Of Hepatogenous Jaundice.*—Duodenal catarrh, biliary calculi, inspissated bile and mucus, hydatid vesicles, foreign bodies from the intestinal canal, such as stones of fruit and round worms, congenital plugging of the duct and cancer of the ducts are causes within the duct. The causes which obstruct the duct by external pressure are: Tumors of the pyloric extremity of the stomach, of the head of the pancreas and of the kidney; pressure from a pregnant uterus, from ovarian and fibroid tumors, from omental tumors, from large impaction of feces, from enlarged lymphatic glands in the transverse fissure, from waxy cancerous or tubercular change, from abdominal aneurism and from hypertrophic cirrhosis of the liver.

II. Causes of Hematogenous Jaundice are: Yellow, typhus, typhoid and malarial fevers (Loomis).

Symptoms.—Jaundice first appears in the conjunctiva, then the skin of the face appears sallow or fawn-color. The urine early undergoes a change and becomes intensely colored with bile-pigment, which it imparts to linen and white paper dipped into it. The best test for bile in the urine is the nitric acid test. Pour into a test tube an inch of nitric acid, and drop the urine slowly on top of the acid. If bile be present, there will be a red line next the acid and green uppermost with violet and blue between. The stools in jaundice are grayish or slate-colored.

sometimes quite white. Jaundice is usually unaccompanied by pain. Headache is a common symptom. There is drowsiness, hebetude of mind and despondency. In some cases there are nausea, a persistent harassing cough, and muscular soreness. The temperature in jaundice is usually below the normal. In many cases the pulse is slow; more or less itching of the skin; sometimes an intolerable itching is observed in many cases. The taste is bitter. The vision may be yellow (Bartholow).

Differential Diagnosis. The yellow staining is slight in hemato-genous jaundice, but it is more intense in hepatogenous. There is great itching of the surface in hepatogenous jaundice which is absent in the hematogenous variety. The feces are dark in hematogenous jaundice and white or clay-colored in hepatogenous (Loomis).

Determination of the Cause. If the jaundice comes on in the course of a gastro-duodenal catarrh, it is probably a case of simple catarrhal jaundice. If it occurs in the course of malarial fever, it is probably due to malaria. If the jaundice is preceded by sudden violent pain in the right hypochondrium, it is due to the passage of gall stones. If the jaundice be persistent—lasting many months—and intense, and follow an attack of pain which has not been repeated since, it is probably due to a permanent occlusion by a gall-stone. If the jaundice be intense, persistent and painless with enlarged liver, it may signify obstruction by hydatids. A faint jaundice lasting many months, with ascites and enlargement of the superficial veins of the abdomen, is produced by sclerosis or cirrhosis or nutmeg liver. Jaundice with persistent pain or soreness in the right hypochondrium indicates cancer (Bartholow).

Treatment.—Laxatives and diuretics are useful. Grain doses of calomel given at night is the best laxative in these cases. Saline laxatives which have a diuretic action are very useful. The compound jalap powder is efficient. In malarial jaundice, ten to thirty grains each day of quinine is useful.

PRESCRIPTIONS FOR JAUNDICE. (Catarrhal.)

- ℞ Ammonii chloridi.....℥ss.
 Ext. taraxaci fluidi.....℥ij.—M.
 Sig.: A teaspoonful three times daily. —Bartholow.
- ℞ Ext. hydrastis fluidi.....℥j.
 Sig.: Ten drops before meals for some weeks. —Bartholow.
- ℞ Sodii phosphatis℥ij.
 In pulv. no. xvi. div.
 Sig.: A powder every four hours. —Bartholow.
- ℞ Ammonii iodidi.....℥j.
 Liq. potassii arsenitis.....℥ss.
 Tinct. calumbæ.....℥ss.
 Aquæ.....℥iss.—M.
 Sig.: A teaspoonful before meals. —Bartholow.

KERATITIS. (Phlyctenular).

Is an inflammation of the cornea. It is characterized by one or more slight elevations of a grayish-white or yellow color, which are about the size of a pin head. Sometimes they are visicles and sometimes semi-solids, and soon their summit is eroded, leaving a little ulcer (Noyes).

Symptoms.—Are subjective and objective. There will be hyperæmia, severe pain, photophobia and lachrymation. It is especially a disease of children, and attacks the ill-fed or over-fed, the weakly and the dirty. There is usually eczema of the head or face. In bad cases the cornea may be perforated (Noyes).

Causes.—Are scrofula, gout, syphilis, malaria, eczema, herpes, struma and exanthematous diseases.

Treatment.—Must be both local and constitutional. If there be only one or two eruptions, and they recent and situated on the cornea, they may be scraped out clean by a sharp spud. Then tie up the eye, and wash it out once in three hours with a two per cent solution of boric acid. Instead of the scraping, the ointment of yellow oxide of mercury, gr. ij. to dr. j. may be rubbed well into the eye once daily. If there is an iritis along with the keratitis, a solution of atropine may be dropped into the eye thrice daily. The chief remedy against photophobia is cocaine which may be

used several times daily. Cold water and boric acid will be grateful. The constitutional and hygienic measures are never to be neglected. Cleanliness, pure air, exercise and a suitable diet will be needed. Mild purgatives as rhubarb and soda are sometimes useful. Cod-liver oil and the syrup of the iodide of iron, are standard remedies (Noyes).

PRESCRIPTIONS FOR KERATITIS.

R Atropinae sulphatis. gr. ij.
Aqueæ destillatæ..... ʒj.—M.

Sig.: One or two drops into the eye three times daily.

—Bartholow.

R Hydrarg chloridi corrosive gr. j.
Aqueæ destillatæ. ʒiv —M.

Sig.: Apply as a bath to the eye by means of a reservoir eye-cup. —Grandmont.

KIDNEY-DISEASES. (See Albuminuria, Bright's Disease and Uremia.)

KINGS'-EVIL. (See Scrofula.)

KNEE-JERK.

In most healthy individuals a vigorous contraction of the quadriceps extensor muscle is produced by striking quickly with the ulnar side of the hand, the ligamentum patellæ when the leg is flexed and the muscles are relaxed. This contraction is called the knee-jerk, or patellar reflex, and may be increased, diminished or abolished in certain diseases of the spinal cord. The centre for the patellar reflex is in the gray matter of the lumbar portion of the spinal cord. Disease of the gray matter in this situation, and of the posterior columns of the lumbar enlargement, cause the patellar reflex to disappear. In various conditions causing spastic paralysis, the patellar reflex is increased. In posterior spinal sclerosis, knee-jerk is absent; it is also absent in disease of the anterior cornua. Knee-jerk is absent in many cases of diphtheria from the very first day of the illness (Flint).

LABOR.

Is the expulsion of the foetus from the uterus. Normal labor occurs when the foetus is mature.

The Pains of Labor.—The pains of labor are first felt over the sacrum, and radiate to the rectum, bladder, across the abdomen and down the thighs. At first the pains are dull, but finally reach the point of supreme agony.

Stages.—There are three stages of actual labor: 1. The stage of dilatation of the cervical canal. 2. The stage of expulsion of the child. 3. The stage of placental delivery (Lusk).

Duration of Labor.—The average for primiparæ is seventeen hours, for multiparæ twelve hours. For the after-pains the following prescription of Witherstine may be used:

℞ Morphiæ sulphatis.....gr. ij.
Aquæ camphoræ.....℥ij.—M.

Sig.: A teaspoonful every three hours.

Leishman's formula may be used for *precipitate labor*:

℞ Morphiæ sulphatisgr. j.-ij.
Olei theobromæ.....℥ij.—M.
Ft. massa et in suppositoria no. iv. div.

Sig.: One as required.

In retained placenta, Atthill's formula is useful:

℞ Tinct. nucis vomicæ.....℥j.
Ext. ergotæ fluidi℥vi.
Elixir simplicis.....ad.....℥vi.—M.

Sig.: A teaspoonful in a wineglassful of water every three hours.

In hour-glass contraction of the uterus, Barnes gives three to five drops of amyl nitrite to be inhaled from a handkerchief.

In protracted labor due to rigid os, Ringer gives the following:

℞ Morphiæ sulphatis.....gr. ij.
Aquæ destillatæ.....℥j.—M.

Sig.: Five or ten minims hypodermically, repeated as necessary.

In protracted labor from atony of the uterus, Leishman gives the following:

℞ Extracti ergotæ fluidi.....℥j.
Olei gaultheriæ.....gtt. iv.—M.

Sig.: A teaspoonful every four hours, only if os is dilated, and soft parts not rigid.

LARYNGISMUS STRIDULUS.

Called, also, spasm of the glottis, internal convulsions, child crowing, etc., is spasm of the muscles of the larynx.

Violent emotion, especially anger, may induce a temporary suspension of respiration in young children. In the midst of their crying, they suddenly hold their breath, but it is not followed by a stridulous inspiration as it is in true spasm of the glottis (Smith).

Causes.—Laryngeal spasm is most frequently met with in children, when indigestion, teething and impressions of external cold are usually assigned as causes. Cerebral irritation is given as a cause. Scrofulous and cachectic children are said to be especially subject to spasms of the glottis (Loomis).

Symptoms.—There is generally previous ill-health. The attacks are more frequent and severe at night, in or after the first sleep, than in the day. A peculiar crowing sound is heard now and then during inspiration especially when the child is crying. In severe paroxysms respiration often ceases entirely for a moment. The face becomes livid. The duration of the paroxysm may be a quarter, a half, or even a whole minute. The paroxysms may occur almost daily for several weeks (J. L. Smith).

Treatment.—During a paroxysm it is customary to employ means to produce a strong impression on the surface, as slapping the back or sprinkling cold water on the face. A ready and effective mode of arresting a paroxysm is to introduce a finger into the throat. If the stomach is overloaded an emetic is indicated. Employ a hot foot-bath, and warm fomentations to the neck. Laxatives should be given. From ten minims to one drachm of paregoric often arrests the paroxysm (Bartholow and Flint).

PRESCRIPTIONS FOR LARYNGISMUS STRIDULUS.

- | | | | |
|-------|--|------|-------------|
| R | Syrupi ipecac | ℥ij. | |
| Sig.: | A teaspoonful every ten or fifteen minutes until free emesis occurs. | | —Bartholow. |
| R | Chloroformi..... | ℥j. | |
| Sig.: | A few drops inhaled from a handkerchief. | | —Bartholow. |

R Tinct. aconiti rad $\overline{3}$ ss.

Sig.: One drop in a teaspoonful of water every hour for three doses, then every two hours. —Ringer.

LARYNGITIS. (Acute and Chronic.)

Is an inflammation of the mucous membrane of the larynx. It may occur at any age. There is an acute and chronic form of the disease.

Causes.—Acute catarrhal laryngitis is caused by atmospherical changes, by exposure to wet and cold and by chilling of the surface, especially of the neck and feet. "Taking cold" is a fruitful cause of laryngitis. Anything that irritates the laryngeal mucous membrane may produce a laryngitis (Loomis).

Symptoms.—Usually at first there is soreness of the throat, accompanied by a sense of constriction, or a tickling sensation with a tendency to cough; the larynx is tender on pressure, there is difficulty in swallowing. The expectoration is at first tenacious; later it may become thick, purulent and abundant. The voice is hoarse or is reduced to a whisper. The face is flushed, the skin hot and dry, there is fever and a frequent pulse (Loomis).

Treatment.—The patient should be confined to bed. The air of the apartment should be kept moist by vapor of water. Tincture of aconite root—one drop for a child and two drops for an adult every two hours—is highly efficient. If there be much cough, two to five drops of the deodorized tincture of opium and one or two drops of the fluid extract of ipecac may be given together. A spray of a solution of morphia to the throat is an excellent means of relieving cough. A very minute quantity of tartar emetic, with paregoric and syrup of lactucarium is also an efficient combination. A hot or cold pack should be wrapped about the throat, after a brief application of mustard; and if the case is just beginning the feet should be placed in a hot mustard foot-bath.

Prophylaxis.—Those who have frequent attacks should wear flannels, and protect the feet against dampness. A cold pack about the throat. The tendency to take cold may be avoided by a daily morning cold sponge-bath. The necessity of an emphy-

ing attack may be prevented by a full dose of quinine and morphine (15 grs. gr. $\frac{1}{4}$ to $\frac{1}{2}$) (Bartholow).

Causes of Chronic Laryngitis. It may be a sequel of acute laryngitis. It may occur from constant use of the voice in public speaking or singing. It constitutes the chief morbid condition in what is termed "clergyman's sore throat." It is frequently secondary to chronic nasal catarrh. It most frequently occurs as an accompaniment of other affections, as syphilis and pulmonary phthisis (Loomis).

Symptoms.—Of chronic catarrhal laryngitis are local. In some the voice is hoarse and husky; in other cases, the patient is only able to speak in a husky whisper. There is a hoarse stridulous cough, with more or less abundant muco-purulent expectoration frequently streaked with blood and of a fetid odor. Inspiration and expiration are often accompanied by a whistling or stridulous sound. In some cases the act of swallowing fluids or solids excites spasm of the glottis. Talking is very fatiguing. In the morning the most severe paroxysms of coughing and straining are experienced: the secretion accumulates during the night, and is detached with difficulty, so that much coughing, hawking and straining are necessary (Loomis and Bartholow).

Treatment.—Mild astringent solutions of alum, perchloride of iron, tannin or sulphate of zinc, from one to twenty grains to the ounce of water may be used. For steam inhalations, a few drops of oil of creosote, oil of pine or oil of juniper, added to half a pint of water at a temperature of 150° F., may be employed. The spray and steam inhalations may be repeated three times daily. A solution of carbolic acid (two grains to an ounce of water) as a spray, may be used with benefit in cases where the laryngeal secretion has a fetid odor (Loomis). The treatment of chronic catarrhal laryngitis of phthisis and syphilis is the same as in simple chronic laryngitis, with the constitutional treatment of those affections added.

PRESCRIPTIONS FOR LARYNGITIS.

℞ Sodii biboratis.....gr. viij.
 Aquæ.....ʒij.
 Aquæ cologniensis gtt. x.—M.

Sig.: Use frequently with atomizer as a spray (chronic form).

—Sajous.

℞ Potassii permanganatis.....gr. ij.
 Aquæ destillatæ.....ʒij.—M.

Sig.: Use with atomizer several times daily. (In fetid variety of chronic laryngitis).

—Sajous.

℞ Tinct. aconiti radicis.....ʒss.

Sig.: One drop in water every hour. When it has existed some days then give the following:

℞ Vini mariani.....Oj.

Sig.: A wineglassful every three hours, with absolute rest of voice. (In acute laryngitis).

—Sajous.

LEAD POISONING.

Is a morbid condition produced by the introduction of the salts of lead into the system, either through the mucous surface or the skin (Loomis).

Causes.—The sources of lead-poisoning are numerous. Painters and workers in lead are those most frequently affected. Drinking water, wines, and ales often become impregnated with it. The application of lead powder as a cosmetic to the face and neck has caused lead-poisoning. Some persons are more susceptible to its poisonous influence than others. Lead taken as a medicine, a dressing for the hair containing acetate of lead, a lotion for the eye, and vaginal injections containing lead may produce lead-poisoning. Lead may be inhaled in sufficient quantities to produce lead-poisoning, as in paper staining, grinding of colors, plumbing, shot-making, etc., lead-poisoning has repeatedly occurred from sleeping in newly-painted rooms. Soda-water may contain lead, and articles enclosed in lead foil may produce poisoning. Children may be poisoned by sucking lead toys (Flint and Loomis).

Symptoms.—In chronic lead-poisoning, the general health is impaired. The skin becomes sallow, dry and harsh. There are

dyspepsia, loss of appetite, and constipation. A blue line forms along the edge of the gums adjoining the teeth. The most important symptom is intestinal colic. It has been called painters' colic, plumbers' colic, colica pictorum, and dry bellyache. Pain is oftenest referred to the region of the umbilicus. It is a dull aching pain, sometimes acute. Patients are inclined to lie upon the belly with a folded pillow placed under them over the seat of pain. There may be nausea and vomiting. Hiccough and eructations of gas are common. The urine is scanty, and micturition is sometimes difficult and painful. There is no fever. The most frequent of the nervous affections is drop-wrist from paralysis of the extensors of the forearm. There is no loss of sensation in the paralyzed limb. The diagnosis can be made by the history of the case, and from the symptoms (Flint and Loomis).

Treatment. Remove the patient from all sources of lead-poisoning. The bowels should be kept freely open. Five to ten grains of iodide of potassium three times daily should be given. A drachm of dilute sulphuric acid in a quart of sweetened water may be taken in twenty-four hours. Faradization for ten or fifteen minutes three times a day for two or three months is the only effectual remedy for restoring the paralyzed muscles. Chloroform given by the mouth and applied over the abdomen sometimes acts promptly and efficiently in relieving the pain. Opium in some form may be required to relieve the pain. The warm bath is useful as a palliative soothing measure (Flint and Loomis).

PRESCRIPTIONS FOR LEAD-POISONING.

R Magnesii sulphatis ʒi.
Acidi sulphurici dil ʒj.
Aque ʒiv.—M.

Sig: A tablespoonful three times daily, preceded by five to ten grains of potassium iodide — Branton.

R Morphici sulphatis gr. iv.
Aque destillate ʒij —M.

Sig.: Five to ten minims hypodermically repeated every fifteen minutes till relieved. — Bartholow.

R Pulv. opiigr. xij.
 Ext. belladonna.....gr. ij.
 Olei tiglliigtt. xij.—M.
 Ft. massa et. in pil. no. xii div.
Sig.: A pill every two hours until relieved. —Loomis.

LEPROSY.

Is an infectious and contagious disease of very ancient date, characterized by nodules which occur most frequently in the skin.

It has been endemic in Egypt, India and China. It was prevalent among the Hebrews.

Leper houses, for the isolation of the diseased, were established in the seventh century. There was an intense dread of the disease, and lepers had to wear a special costume, usually a long gray gown with a hood drawn over the face; they carried a wooden clapper to give warning of their approach. They were not allowed to enter churches, inns, mills or bakehouses, nor to touch healthy persons, nor to eat with them, nor to wash in the streams, nor to walk in narrow foot paths. A leper woman, quick with child, was buried alive. Leprosy is still common all over the east, and there are leper villages in China, Japan, Persia and Crete. The disease is also common in Africa, India, Madagascar, St. Helena, Maderia, Canaries, Azores, West Indies, Mexico, Brazil, Central America, Norway and the Hawaiian Islands. Sporadic cases occur in England and France.

Causes.—It is an hereditary disease, and there is the strongest repugnance to marriage into a family where leprosy is known to exist. It is an infectious and contagious disease. It never originates *de novo*. The lesions of leprosy contain characteristic bacilli which would seem to be the real cause. Climate, poverty and bad hygiene are predisposing causes (Anderson).

Symptoms.—Leprosy appears as a constitutional disease, marked externally by the deposition of a peculiar albuminous substance in the skin, appearing as discolored patches and nodules, and effecting the nerve centres and peripheral nerves. Leprosy has been divided into two forms, viz: the tuberculous and the anæsthetic. The tubercular is characterized by dis-

colored patches and nodules, and the anæsthetic by depositions in the nerve centres. After an uncertain prodromal stage, there will appear successive outbreaks of the eruption, in the form of blotches on the skin, which come and go before tubercles make their appearance. The tubercles appear on the site of the patches. When the tubercles are fully formed, they are brown and the skin is thickened, and the hyperæsthesia is succeeded by anæsthesia. Sometimes there is an irregular thickening of the entire skin of the face. Tubercles are most frequently developed on the head, face, ears, nose, extremities, the mammary gland and nipple, the scrotum and around the anus and vagina. There is but little pain in this stage of the disease. The tubercles are extremely apt to ulcerate from personal uncleanness, and then the odor of the patient is extremely offensive. Ulceration most frequently commences at the tips of the ears, then at the toes and fingers, and it often terminates in necrosis, the fingers and toes dropping off joint by joint leaving a well healed stump. Ulceration and sloughing may take place with but very little pain. In about nine years the disease reaches its climax, the whole system is poisoned, and the patient presents an aspect the most loathsome that can be imagined. The natural duration of the disease is about fifteen years (Anderson).

Treatment.—The disease is incurable, and the treatment is merely palliative. To cure the disease the ancient kings of Egypt bathed in the blood of slaves. The Hindoos drank cows' urine. Chaulmoogra oil and Gurjon oil are the best remedies known for leprosy.

LEUCOCYTHÆMIA.

Called also leucæmia, is a disease characterized by the enormous increase of the white corpuscles of the blood, accompanied by enlarged spleen and enlarged lymphatic glands (Bartholow).

Causes.—The real cause of this malady is unknown. It occurs at all ages and conditions, but is most frequent between thirty and forty-five. It is twice as frequent in men as in women. In women there seems to be a connection between the generative

organs and this disease. Cold, wet, and all anti-hygienic conditions predispose it. The morbid alterations begin in the spleen, then attack the lymphatic glands, then the marrow of the bones and finally become general (Bartholow and Loomis).

Symptoms.—Leucocythæmia develops gradually. There is usually a history of the gradual appearance of weakness, mental and physical anæmia, ringing in the ears, vertigo and palpitation. The patient becomes pale and assumes a waxy appearance. In about eighteen months, the anæmia becomes profound, the lymphatics of the neck, groin, or other superficial parts are found to be somewhat enlarged. The spleen is also enlarged. There are dyspnoea and at times profuse sweating, feverishness toward evening, rapid pulse, cedema of the ankles and puffiness of the eyelids. The least cut bleeds severely. A soft blowing murmur anæmic murmur is heard at the base of the heart. In leucocythæmia the blood is paler than normal. The contrast is nicely shown, when a drop of the blood is compared with a drop of healthy blood, on a piece of white linen. In this disease there is one white corpuscle to six of the red. There is constipation at first, and finally diarrhoea persists. It is a chronic malady, and the average duration of the whole disease is two years (Bartholow and Loomis).

Prognosis.—All cases are fatal.

Treatment.—Must be symptomatic, as we have no specific for this disease. Quinia, iron and ergotin can be given together in pill form; five grains of quinia, one grain of reduced iron, and two grains of ergotin should be administered three times a day. Electricity should be applied to the splenic region. Good results are obtained from the local application of the ointment of the biniodide of mercury to the splenic region. The ointment should be rubbed in daily, before a bright fire, until the skin begins to vesicate, then discontinued for a few days. As the blood is impoverished in this disease, careful alimentation is of the greatest importance. Fats, starches and sugars should be excluded from the diet, and the patient fed on fresh meats, milk, eggs and fish. Pepsin and muriatic acid should be administered after each meal. Fowler's solution, and the compound syrup of the hypophosphites may be given with benefit (Bartholow).

PRESCRIPTIONS FOR LEUCOCYTHÆMIA.

R Acidi nitro-muriatici dil ̄j.

Sig.: Ten to twenty drops in a wineglassful of water thrice daily.
—Hartshorne.

R Quiniæ sulphatis.....5j.

Ferri sulph. exsiccant.....5iss.—M.

Ft. massa et in pil. no. xxx. div.

Sig.: Four or five pills daily. —Bartholow.

LYMPHADENOMA.

Called also Hodgkin's disease, because it was first described by Dr. Hodgkin in 1832; known also as pseudo-leucocythæmia or leukæmia, is a disease characterized by enlargement of the lymphatic glands and spleen, and by progressive anæmia, but without an increase of white corpuscles in the blood (Bartholow).

Causes.—Are unknown. It is not hereditary. It may come on in a person in apparently perfect health; it is more common in men and in youth and old age than in the middle period of life; but it may occur at any age (Bartholow).

Symptoms.—The lymphatic glands in the neck, armpit or groin are first attacked, and become greatly enlarged. Unlike scrofulous glandular enlargement they undergo no caseation, suppuration or retrogressive changes. All the lymphatics of the body may be enlarged. The spleen is enlarged. Emaciation and anæmia are marked and progressive. There may be dull pains from pressure on the sensory nerves. The pulse is small and rapid. There is usually fever in the evening. The number of white corpuscles in the blood is not in excess of the normal in the majority of cases. The course of the disease is chronic. One year is its average duration; two months and three years are its extremes (Bartholow and Loomis).

Differential Diagnosis.—Lymphadenoma may be mistaken for leucocythæmia. In leucocythæmia the changes in the glands succeed to those in the blood, whereas the glandular enlargement is first in Hodgkin's disease. By microscopic examination, when the ratio between the white and red corpuscles reaches one

to twenty the case must be regarded as one of leucocythæmia (Bartholow and Loomis).

Prognosis.—Is bad.

Treatment.—Fowler's solution increased to ten, fifteen or twenty minims, thrice daily, according to the forbearance of the stomach seems to be effective; and one to five minims in distilled water may be injected into the enlarged glands. Iodide of potassium may be tried. The syrup of the iodides of iron and manganese has seemed to do good. Cod-liver oil is useful as a nutrient and tonic (Bartholow).

LEUCORRHŒA.

Is a morbid alteration and exaggeration of the physiological uterine and vaginal secretions. In a state of health these parts secrete in small quantity a mucous liquid which always contains a few leucocytes. As soon as this has become abundant and purulent, it is morbid and constitutes a leucorrhœa. Leucorrhœa is also called *whites*, and is a catarrhal condition of the vagina and uterus.

The purulent discharge may be from two sources, the uterus or the vagina. Vaginal leucorrhœa may often be found alone; it may be a discharge of very thin fluid of a milky appearance, which does not stain the linen much, or it may be charged with pus and be of a greenish-yellow color; its reaction is acid. Leucorrhœa from the body of the uterus is of a somewhat viscid nature; that from the cervix is jelly like and in the normal state is transparent, like the unboiled white of egg, staining the linen strongly; in disease it is of a greenish-yellow color. Its reaction is alkaline. The leucorrhœal secretion is constantly produced, but is voided a little at a time.

Causes.—Leucorrhœa may depend simply on a general debilitated condition, as anæmia, chlorosis, etc. This symptomatic form is so frequent that Marc d'Espine has claimed to find it in two-thirds of the women.

℞ Potassii permanganatis.....℥ss.
 Aquæ.....℥xv.

Sig.: For vaginal injection. In fetid discharge. —Bartholow.

℞ Sodii biboratis.....℥ij.

Sig.: A teaspoonful to a pint of water as a vaginal wash. For leucorrhœa of pregnancy. —Parvin.

℞ Potassii chloratis.....℥ij.

Sig.: A teaspoonful to a pint of water as a vaginal injection. (In simple cases.) —Parvin.

LICE.

There are three varieties of this affection, each dependent upon a separate parasite, namely: 1. The pediculus corporis, which is met with exclusively upon non-hairy parts. It secretes itself among the folds of the clothing, and is rarely seen upon the body except when feeding. 2. The pediculus capitis, which is met with exclusively upon the head. And 3. The pediculus pubis, which is met with on all hairy parts except the head, but the hair on the pubis and neighboring parts is its favorite hunting ground. The crawling and biting of these parasites produce irritation and itching, to relieve which the part is scratched (Anderson).

Treatment.—Is very simple. The most effectual remedies are carbolic acid, sulphur, mercury, staphisagria, sabadilla and pyrethrum, the essential oils and alcohol. The following formulæ are good :

℞ Acidi carbolici.....℥ij.
 Spts. rosmarini.....℥j.
 Spts. rectificati.....℥ss.
 Aquæ destillatæ.....ad.....℥vj.—M.

Sig.: Sponge the affected parts night and morning.—Anderson.

℞ Hydrargyri perchloridigr. xij.
 Spts. rectificati℥j.
 Aquæ destillatæ.....℥v.
 Olei rosæ.....℥j.—M.

Sig.: Sponge the affected part night and morning. —Anderson.

℞ Pulv. staphisagriæ℥j.
 Adipis℥iv.
 Olei rosmarini.....gtt. xxx.—M.

Sig.: Apply once daily. —Anderson.

LICHEN.

Is a papular inflammation of the skin. It consists of minute conical papulæ, generally of reddish color, and occurring in clusters. It is most frequently encountered in the summer months and in adults, and often in persons who are in good health, but who have been exposed to much fatigue or anxiety. Disordered digestion may produce it. It is commonly chronic (DaCosta).

Treatment.—Arsenic sometimes relieves lichen and other obstinate skin affections (Ringer). Cantharides is useful in lichen. An ointment composed of half a drachm of chloroform to an ounce of lard will often allay the itching of lichen or of urticaria. Patches of obstinate lichen and psoriasis, especially of the hands, even when not syphilitic, will sometimes yield to mercury treatment. The calomel and nitrate of mercury ointment may be mixed, and the addition of tar ointment sometimes increases the efficacy of this combination (Ringer). In lichen psoriasis, eczema, ichthyosis, urticaria, prurigo and scabies and the warm bath may be employed with much benefit.

PRESCRIPTIONS FOR LICHEN.

- | | |
|---|----------------|
| <p>℞ Cretæ præparatæ.....3vi.
 Sulphuris sublimati.....
 Olei cadini—aa.....3ix.
 Saponis nigris.....
 Adipis—aa.....3xxv.
 (Melt the lard and then add other ingredients.)
 Sig.: Apply locally.</p> | <p>—Hebra.</p> |
| <p>℞ Sodii arseniatis.....gr. iss.
 Aque destillatæ... ..3xxv.—M.
 Sig.: A teaspoonful every morning at meal time.</p> | <p>—Vidal.</p> |
| <p>℞ Glyceriti amyli.....3v.
 Pulv. acidi tartarici.....gr. xv.—M.
 Sig.: Apply locally.</p> | <p>—Vidal.</p> |

LOCOMOTOR ATAXIA.

Called also Duchenne's disease, known also as posterior spinal sclerosis, tabes dorsalis, gray degeneration of the posterior columns, and leuko-myelitis posterior chronica, is one of the most frequent diseases of the spinal cord, and is a form of myelitis which does not extend transversely, but longitudinally, and is limited to the posterior columns (Bartholow).

Causes.—An inherited tendency is probably the chief cause. It occurs between twenty and sixty, but is most frequent between thirty-five and fifty. It attacks males six times as often as females. Exposure to cold and dampness, fatigue and depressing moral emotions favors its development. Sexual excesses, rheumatism, syphilis, excessive use of tobacco and blows on the spine are predisposing causes (Bartholow and Loomis).

Symptoms.—The distinctive characteristic of the affection is impairment or loss of the ability to combine and direct voluntary muscular movements.

Stages.—1. The initial period or first stage. 2. The ataxic period, or second stage. And 3. The paralytic or third stage. During the first stage or period, there are sharp, tearing, lightning pains in the lower limbs, dysuria, incontinence, spermatorrhoea, nocturnal pollutions, excitement of, or loss of sexual desire, a sense of weariness in the limbs and nausea and vomiting, attended by severe and paroxysmal aching in the stomach. A sense of numbness and formication in the limbs is common in this period. There may be a girdle sensation, not only about the waist, but also in the limbs—chiefly about the knee and ankle. Rectal and urethral colic are frequent. The pains during this period are usually in the feet and legs, but they may have their seat in the back, stomach, intestine or bladder. At first they do not come on often, and are of short duration. The muscles of the eyes may be affected, causing double vision, or strabismus, which may last a few days, and then disappear. Sometimes the patient will complain of a sensation of some soft substance between the feet and the ground. One portion of the surface may be anæsthetic, another hyperæsthetic. The pupil on one side may be contracted to the size of a pin's point, showing paralysis

of the sympathetic, and on the other side dilated. Oftener both pupils are contracted. A symptom which possesses considerable diagnostic value is the absence of contraction of the pupil on exposure to light, while there is normal contraction in the acts of accommodation; this is called the "Argyll-Robertson pupil."

The "Knee-jerk," or patellar tendon reflex, is found to be absent in 76 per cent. of the cases, according to Buzzard. The duration of this stage varies from a few months to several years, and then begin the symptoms characteristic of the second or ataxic stage. The ataxia is generally first manifested in the lower extremities. The legs are thrown forward with a quick, jerking movement, and the feet are brought to the ground on the heels with force and are liable to strike against each other. The patient is unable to button or unbutton clothes, when the upper extremities are affected. There may be double vision and night-blindness. A symptom even when the affection is slight, is inability to stand with the feet in apposition and the eyes closed. The patient's eyes are directed to the feet and ground in walking. Impotence occurs in this stage. The patellar reflex is wanting and this is diagnostic. Cutaneous sensibility is more or less impaired. During this period the joints sometimes rapidly swell. In the third or paralytic stage, notable paralysis is added to the ataxia. The muscles waste, the patient falls into a cachectic state, cystitis and bed-sores occur, and death takes place from exhaustion. During this third stage, there is always complete impotence, and loss of sensation about the rectum. Locomotor ataxia is a non-febrile disease. The whole duration of the disease is on the average seven years, but may continue thirty years. The shortest duration is three years (Bartholow, Flint and Loomis).

Differential Diagnosis.—Locomotor ataxia may be confounded with paraplegia, multiple cerebro-spinal sclerosis, cerebellar disease, chronic myelitis, and chronic spinal meningitis. In paraplegia, there is true paralysis; the limbs merely dragged in walking; there is no resistance to artificial movement; the nutrition of the muscles is greatly impaired; neuralgic pains are absent, and there are no ocular symptoms. In ataxia these symptoms are reversed. In multiple cerebro-spinal sclerosis, there are a peculiar

shaking tremor, impairment of voice and speech, and nystagmus. In ataxia these symptoms are absent. In ataxia there are iron band sensations, bladder symptoms, the lightning-like pains and the heel walk, all of which are absent in the former disease. In cerebellar disease there is vertigo. The patient can stand and walk better with his eyes shut than open. There is absence of neuralgic pains; and headache, vomiting and convulsions are prominent symptoms. In ataxia this is not so. In chronic myelitis there are no disorders of co-ordination. In chronic myelitis the limbs are dragged, and the ocular symptoms are absent. The reverse in ataxia. In meningitis there is pain increased on pressure, slight paralysis, but no inco-ordination, and no ocular symptoms (Loomis).

Prognosis.—Unfavorable.

Treatment.—About one grain a day in divided doses of nitrate of silver is recommended. The galvanic current is nearly always of service. Some cases will be benefited by the iodides, others by the bromides. Strychnine, phosphorus, arsenic, the chlorides of gold, sodium, and barium, belladonna and ergot all have been recommended. The patient should remain at rest and not expose himself to cold or wet, and should wear flannel next the skin. Coffee, tea, tobacco and alcoholic stimulants should be given up. Cold water baths are favorable (Bartholow and Loomis).

PRESCRIPTIONS FOR LOCOMOTOR ATAXIA.

R Ext. physostigmatis.....gr. x.
Ext. gentianæ. gr. xl.—M.
Ft. massa et in pil no. 100 div.

Sig.: One pill every three hours. —Murrell.

R Antifebrin.....5j.
In pulv. no. xv. div.

Sig.: One powder every half hour for two doses, then every four hours.

R Strychniæ sulphatis..... gr. iss.
Syr hypophosphiti.....℥xij.—M.

Sig.: A teaspoonful thrice daily. —DaCosta.

LUMBAGO. (See Muscular Rheumatism.)**LUPUS.**

Is a chronic tubercular skin disease. In lupus, a tissue is formed like granulation tissue. Tubercles form, which may ulcerate, and are of a dull red color. When they heal, they leave a whitish scar (DaCosta).

Causes.—The disorder occurs in syphilis, or in scrofulous persons. It appears often in childhood, and is attended with some pain and itching, and pursues a very slow course. The nose and cheeks are the favorite sites. In strumous subjects, lupus has a warty appearance. Some hold that lupus is the offspring of syphilis in the parents (DaCosta).

Treatment.—Anti-strumous remedies should be given. Our sheet-anchor in most cases is cod-liver oil given for a long time. Next to cod-liver oil must be placed phosphorus. Arsenic may be given, also the syrup of the iodide of iron. Nitrate of silver should be applied locally (Anderson).

PRESCRIPTIONS FOR LUPUS.

℞ Zinci chloridi.....
 Antimonii chloridi.....aa.. gr. xx.
 Pulv. iridis florentinæ rad.....gr. x.
 Acidi hydrochlorici puri.....℥x.—M.

Sig.: Use as a caustic, spread on linen strips and leave on 24 hours. —Kaposi.

℞ Acidi pyrogallici.....5j.
 Cerati simplicis.....3ix.—M.

Sig.: Apply locally. —Kaposi.

℞ Acidi lactici puri3j.

Sig.: Apply to ulcer on absorbent cotton. —Wichmann.

℞ Iodini
 Potassii iodidi.....aa..... ..gr. xv.
 Glycerinæ.....℥. xxx.—M.

Sig.: Apply locally. —Kaposi.

LIPOMA.

Is a tumor formed of a fat tissue. The fat tissue occurs in lobules and is similar to normal fat. Fatty tumors may undergo partial calcification. They are usually sharply circumscribed, but may infiltrate surrounding tissue. They are frequently pedunculated, and sometimes grow to enormous size, and may ulcerate. They are usually single but may be multiple. They are the most common of tumors. They are benign, or innocent tumors, not forming metastases.

Occurrence.—They occur at all periods of life from infancy to old age, and are even congenital. They are more common in the female. As a rule, these tumors are encapsuled. They are soft, movable and free from pain.

Situation.—Their most usual situation is the back of the neck and shoulders.

Cause.—Unknown.

Diagnosis.—Not difficult. The tumor will feel more or less firm and made up of lobes. The skin is usually loose over the tumor.

Treatment.—When no necessity exists for their removal, tumors should be let alone. When large, unsightly and growing, they should be removed by excision (Bryant and Prudden).

LOCK-JAW. (See Trismus.)

LACTATION. (Excessive.)

Treatment.—When it is desirable to arrest the secretion of milk the gland may be enveloped by a belladonna plaster. A more elegant method is to envelop the breast in lint wet with a solution of atropine, four grains to the ounce of rose water. Inflamed breasts may be treated in the same way. Quinia has been recommended in excessive secretion of milk. An ointment made by boiling half an ounce of tobacco in eight ounces of lard kept constantly applied to the breasts, is also said to arrest the secretion of milk (Bartholow and Ringer).

LEAD COLIC. (See Colic).

LENTIGO. (See Freckles).

LEUCODERMA.

Called also vitiligo, is an affection characterized by an absence of pigment at certain parts surrounded by portions of skin in which it has accumulated to an excessive degree, so that brown patches are seen enclosing white ones. The white spots are at first circular in form, but uniting with each other become irregular in shape. It may involve almost the whole body, but is usually confined to the hands, face and neck. It is most commonly met with in persons of color. It is a rare affection (Anderson).

Causes. Some hold that it is a congenital affection. Its cause is very obscure, but there can be little doubt that it is a neurotic affection, and probably dependent upon perverted innervation of the sympathetic nerve. The exciting cause is sometimes apparently a lesion of some kind; as a burn, surgical operation, etc., (Anderson).

Diagnosis.—Leucoderma is met with in all parts of the world. The general health of the patient is unaffected. The white patches are round and of a dead-white tint. There is no alteration in the structure of the skin. Sensation is normal (Anderson).

Treatment.—Nerve tonics, such as phosphorus, strychnia and above all arsenic should be tried (Anderson).

MALARIAL FEVERS.

Are characterized by their prevalence in certain regions of the world known to produce the poison malaria, by their periodicity, and by the regular succession of the cold, hot and sweating stages. There are many varieties of malarial fever and they have received various names, such as fever and ague, chills, bilious fever, bilious remittent, remittent, intermittent, pernicious intermittent, congestive, "mountain fever of Colorado," continued malarial, typho-malarial, Chickahominy fever, "the shakes,"

swamp fever, "Panama fever," "camp fever" and periodical fever (Bartholow).

Causes.—All varieties of malarial fevers have a common origin in a poison which has received the name of miasm, or malaria, and which is subject to certain variations in quantity. By some this miasm, or malarial poison, is regarded as gaseous in its nature, by others it is thought to be a living vegetable organism, and again others think it a specific poison, having no tangible, chemical or microscopical constituents. Certain protoplasmic bodies have been found in the red corpuscles of malarial patients, which were called "*plasmodium sanguinis malarie*," but it is not known whether they are normal or are the cause or result of the malarial infection. But while we do not know the true nature of malaria, yet we do know something of the circumstances which are necessary for its production. First, a certain amount of vegetable matter on or in the soil is absolutely necessary. Second, a certain amount of moisture on or in the soil is indispensable. Third, a certain degree of temperature is necessary. It cannot be developed below an average temperature of 58° F. for the twenty-four hours.

Infected Regions.—Marshes are especially favorable to the development of this poison, and may generate it for an indefinite period. The Pontine marshes, between Rome and Naples, have been malarial for more than two thousand years. But not all marshes produce malaria. The "Dismal swamp," for example, is free from marsh-miasm, although apparently well adapted to produce it. Its exemption is supposed to be due to the growth of the cypress-tree. If the marsh contains an abundance of water, malarial fevers are rare. If the marsh be covered with a thin sheet of water, or has dried up, malarial poison will abound. As a rule, salt water marshes are especially free from malaria, but when salt and fresh water are mixed in the marsh, the best conditions for malaria exist. Damp "bottom lands" are as fruitful as swamps in the generation of this poison. Another condition which favors the development of malaria is the upheaval of new alluvial soils in cultivating, or in excavating for railroads. Regions otherwise non-malarial may have malarial poison brought to them by the waters of rivers which have their

source in or flow through malarial districts, as along the banks of our Western rivers; or it may be brought to them by the wind.

Circumstances which are inimical to the production of malaria are:

I. High Latitude. In this country malarial poison is not generated in higher latitude than that of Quebec. The limit of its development is 68° north and 57° south latitude. The nearer the approach to the Equator, the more severe the type.

II. High Elevation. As a rule, it is not generated above an elevation of 1000 feet above the sea, but there are exceptions to this afforded by the so-called "mountain fever" of Colorado, of the Pyrenees, and of the mountains of South America.

III. Drainage and Cultivation.—In the majority of marshes, malaria can be prevented or arrested by free drainage. Yet there are marshes upon which millions have been expended in drainage and which still remain pestiferous, as for example the Jersey Flats and Pontine marshes.

IV. Cold. This is a powerful agent in arresting malarial generation. If the temperature should fall below the freezing point, only for one night, nothing more need be feared in that region from malaria, until the average temperature shall have again reached 60° F. This law holds in all malarial districts. Malaria is most active from June till November. Malaria is soluble in water, and Bartholow found the surface water of Kansas to produce malarial fevers and cholera.

Some trees and plants possess the property of absorbing the malaria. The eucalyptus-tree has changed the nature of the malaria-breeding portion of the Algiers. The common sunflower, planted in moist low-lands, will render the air salubrious. All ages are susceptible to malarial poisoning; and all races are equally so, except the black. Malarial poison may gain entrance into the human body through the respired air, or through food or drink (Bartholow and Loomis).

Pathological Anatomy.—The changes caused by malarial poisoning are essentially the same, except degree, in all forms in which the disease manifests itself, and two organs (the liver and spleen) are chiefly concerned. In acute cases, the spleen is

much enlarged. In some chronic cases the spleen undergoes enormous enlargement, and is known as "ague-cake." The liver becomes hyperæmic and swollen. The brain is also hyperæmic (Bartholow).

Symptoms.—Prodromal stage.

The incubation period is about fourteen days. During this time there are symptoms indicating that the infection is working. These are called prodromes. The patient has a feeling of lassitude and weariness, backache and general muscular soreness; he yawns and stretches, has headache, coated tongue and deranged stomach; in the evening his skin is warm and dry, but he has profuse sweat in the morning. There may be yellow sclerotic, and a general yellowish hue of the skin, loss of appetite and constipation. The urine is loaded with bile pigment (Bartholow).

INTERMITTENT FEVER.

Called also, "fever and ague," "chill fever," "the shakes," "swamp fever," "Panama fever," is characterized by the occurrence of febrile paroxysms in regular succession, and by the absence of febrile movement between the paroxysms. The intermission is the distinctive feature of this form of fever, as its name implies. Like typhoid fever, intermittent fever is met with in all parts of the world, except in the extreme north or south.

Morbid Anatomy.—The essential anatomical lesion in all forms of malarial fever is the presence of dark pigment in the blood and in certain organs. The only constant pathological lesion of intermittent fever is congestion of the internal organs. The spleen and liver are always more or less enlarged, but the enlargement is due to simple hyperæmia; no structural changes occur in these organs until the intermittent paroxysms have been often repeated, and the malarial poisoning has been of long duration. There is also more or less hyperæmia of the kidneys and mucous membrane of the intestine (Flint and Loomis).

Cause.—Malarial poisoning introduced either through the lungs or intestinal tract (Loomis).

Symptoms.—Intermittent fever occurs in paroxysms. There are three simple types of this fever. The first and most common is the quotidian type, in which the paroxysm occurs every day, and there is an interval of 24 hours between the paroxysms. The second is the tertian type, in which the paroxysm occurs every third day, with an interval of 48 hours between the paroxysms. The third is the quartan type, in which the paroxysm occurs every fourth day, with an interval of 72 hours between the paroxysms. There are other types, but they are only modified forms of those already mentioned, such as double quotidian, in which two paroxysms occur daily. Usually one paroxysm is severe, the other mild; the severe one generally occurs in the morning, the milder in the afternoon or evening. There is also the double tertian, in which a paroxysm occurs daily, but it differs from quotidian as the paroxysms that resemble each other occur at intervals of 48 hours. There is also the double quartan. In this type a paroxysm occurs on two successive days, and on the third day there is no paroxysm. Cases have been observed in which the paroxysm occurred on the fifth, sixth, seventh and eighth day, giving us a quintan, a sextan, a heptan, and an octan type of intermittent fever. The types most frequently met with are the quotidian, tertian and quartan. In the quotidian type the paroxysm occurs in the morning, in the tertian it occurs about noon, while in the quartan it occurs in the afternoon or evening.

Duration of Paroxysm.—In the quotidian it lasts from eight to ten hours, in tertian it lasts from six to eight hours, in quartan from four to six hours.

Description of a Paroxysm.—Paroxysms may occur at any hour of the day, but rarely at night. A paroxysm consists of three stages—the cold, the hot, and the sweating stage.

Cold Stage. Pain in the head, a sense of languor, and some nausea usually precede this stage. When the cold stage comes on, there is a sensation of coldness along the back, which soon extends to the extremities, and gradually creeps over the whole body. The skin becomes shrivelled, the finger ends and lips become blue, the face is pale, the eyes are sunken, chills rapidly follow each other, the teeth begin to rattle together and the bed

shakes. The skin assumes the appearance of goose-skin. The temperature rises to 104° or 105° F., although the surface of the body feels cold. The pulse is small, rapid, and the tension high. There is præcordial oppression and the voice is weak and husky. The respirations are rapid, short and sighing. The urine is increased in quantity and paler than normal, and there is a frequent desire to empty the bladder. There is extreme thirst and often nausea and vomiting. There is congestion of internal organs. The duration of this stage varies from a half hour to two or three hours. Children do not have a regular chill; they merely grow cold, blue and livid.

Hot Stage. The skin becomes red, hot and swollen, and the blood recedes from the internal organs to the surface. There is intense pyrexia. The face is flushed and eyes red and fiery. The pulse grows full, rapid and strong. The headache continues, but the pain in the limbs and præcordial oppression disappear. The temperature marks 106° or 107° F. Thirst is intense. Sometimes herpetic vesicles appear about the mouth. The tongue becomes dry, the carotids pulsate, the head feels full; there are noises in the ears; there are nausea and vomiting, and there may be excitement and delirium. The urine in this stage becomes scanty and high colored. The duration of this stage is between three and eight hours and it is followed by the sweating stage.

Sweating Stage. The sweat appears first on the face and then on the trunk and extremities. The fever gradually abates and at length disappears. The heat of the surface, cephalalgia, thirst, restlessness, etc., cease. The patient obtains refreshing sleep. With this stage the paroxysm ends. The average duration of the sweating stage is three or four hours. As a rule, the successive paroxysms recur precisely or nearly at the same hour. When the paroxysm comes on a little earlier each day, it is called anticipating, and indicates that the fever is not being controlled; when it comes on later each day, it then indicates that the fever is being controlled, and is called a postponing intermittent (Bartholow, Flint and Loomis).

Intermission.—The intermission, called also the apyrexial period, is the space of time between two successive paroxysms.

During the intermission at first the patient may feel perfectly well, but if the disease continue, there will be a loss of vitality, he becomes pale and feeble with a yellowish, or sallow tint to the skin. There will be enlargement of the spleen and liver, and pigmentation of the tissues. These characters denote what is called the malarial cachexia (Loomis and Flint).

Duration.—Of the disease is indefinite. It may continue for weeks or for months. The liability to relapse remains for many years.

Dumb Ague, or Latent Intermittent Fever. When the chill and sweat are absent, but a sense of heat, malaise, headache and lassitude come on at pretty regular periods in a malarial district, the thermometer showing a fever of 102° to 104° F. the patient is said to have "dumb-ague" (Loomis).

Differential Diagnosis. Intermittent fever may be mistaken for remittent fever, pyæmia, and pulmonary phthisis. In remittent fever there is never a complete intermission, whereas in intermittent there is always a period in which there is no fever. In remittent, there is usually but one chill, while in intermittent a chill precedes each paroxysm of fever.

Pyæmia is very irregular in its course, no defined intervals occurring—intermittent is regular. *Pyæmia* is due to wounds, suppuration of veins, etc., intermittent to malaria. The former is a fatal disease over which quinia has no influence, the latter is promptly cured by quinine. Febrile paroxysms resembling those of intermittent fever are sometimes observed in connection with pulmonary phthisis. They may present the three stages well marked, and recur at regular intervals. But they oftener occur in the afternoon than in the forenoon, whereas the reverse obtains in intermittent fever (Flint and Loomis).

Treatment.—The treatment of the paroxysm is simply to render the patient comfortable. The patient should be kept in bed during the paroxysm. During the cold stage, cover him with blankets, surround him with bottles of hot water and let him drink freely of hot water. During the hot stage, the external heat should be gradually removed and cold drinks given. If nausea and vomiting are present give opium hypodermically. During the sweating stage let him alone. The treatment for the

intermission is to prevent the occurrence of another paroxysm. A patient should never be allowed to have a second intermittent paroxysm. The sulphate of quinia is our sheet anchor in this disease, and it is all powerful if skillfully used. At least thirty grains of quinine should be administered between the termination of one paroxysm and the hour when another is to be expected. The first dose of ten grains should be given toward the close of the sweating stage, and twenty grains about two hours before the time of the expected paroxysm. A moderate degree of cinchonism should be maintained for a number of days. About two hours before the time of day at which the first paroxysm occurred from ten to fifteen grains of quinine should be daily administered. A full dose of opium with the quinine will sometimes prevent a recurrence of the paroxysm. In some chronic forms of malaria, arsenic is of great service. Salicin, strychnia, piperine, eucalyptus, and hydrastia sometimes act when quinine fails. Flint has known a sinapism applied over the whole length of the spine at the beginning of the cold stage to arrest the paroxysm and effect a cure. A full opiate at the beginning of the cold stage often appears to shorten and modify the severity of the paroxysm. For the treatment of the enlarged spleen there is, besides the exhibition of quinine, no remedy more efficacious than the ointment of the red iodide of mercury, which is rubbed in daily over the splenic region in the sunshine, until soreness of the skin compels a suspension (Bartholow, Loomis and Flint).

Prophylaxis.—Those living in, or going to malarial regions, susceptible to the action of the poison, must avoid all excesses of every kind, exposure to fatigue, to heat, to night air, and should take five or ten grains of quinine daily in the morning, in some black coffee, to procure immunity against malarial infection (Bartholow).

PERNICIOUS INTERMITTENT FEVER.

Called, also, malignant congestive or tropical typhoid is a severe form of the remittent or intermittent fever. It occurs in those places where the malaria is most concentrated, and the malarial fevers most severe.

Varieties. There are several varieties, namely: the comatose, the delirious, the algid, the icteric and the gastro-enteric.

Symptoms.—In the comatose variety during the hot stage the patient passes into a state of stupor and unconsciousness, lies upon his back, with a flushed face, congested conjunctiva, dilated pupils, slow, deep and stertorous respiration. He sometimes passes into a condition of apparent death which may last for hours. If the patient survive the first and second paroxysms, he usually dies during the third.

In the delirious variety, the patient after passing into the hot stage, becomes wildly delirious and requires restraint. This delirium may continue for hours. These attacks of delirium may be repeated three or four times before the patient dies.

In the algid variety, after the patient enters the hot stage, the surface of the body begins to grow cold, has a marble-like feel, and the temperature in the axilla may fall to 88° F. or 84° F., while the rectal may range from 104° F. to 107° F. The pulse becomes slower and slower, falters, and disappears at the wrist. The patient has a death-like appearance.

In the icteric variety, the patient has a violent long-continued chill, during which jaundice shows itself. The jaundice gradually deepens and extends over the whole body. There is nausea and vomiting of bile. The temperature reaches 106° F. or 107° F.

In the gastro-enteric variety, the patient after passing into the hot stage, is seized with almost incessant vomiting and purging. The discharges are stained with blood. There is a sense of burning in the stomach, cramps in the calves of the legs, coldness and blueness of the surface and sunken eyes (Loomis).

Prognosis.—Unfavorable.

Treatment.—Quinine and opium are the only reliable agents for this disease. From five to seven grains of quinine should be given hypodermically every hour until the paroxysm has passed away, then three grain doses every four hours. One-fourth of a grain of morphia should also be given and repeated if necessary. Warburg's tincture may be used with good results. A half ounce may be given at the outset of the paroxysm and this dose repeated if necessary (Loomis).

REMITTENT FEVER.

Called also bilious fever, and bilious remittent fever, is a form of malarial fever characterized by the occurrence of remissions instead of intermissions.

Cause.—Malarial poisoning.

Symptoms. There are oppression in the epigastrium, lassitude, nausea, loss of appetite, and pain in the limbs and head. It does not come on gradually, like typhoid fever, but abruptly, usually with a chill. The chill is neither so complete, nor so long continued as in intermittent fever or pneumonia. There is no shaking of the body or chattering of the teeth. Following the chill the temperature may reach 105° F. or 106° F. The face becomes flushed, the eyes congested, and there is vomiting of bile. The febrile symptoms increase in severity for ten or twelve hours, when a slight moisture appears upon the surface, and the temperature falls one or two degrees, but there is not a complete interruption; the fever is continuous. At the same hour the following day all the active febrile symptoms return, and are more severe. This rise and fall of temperature constitutes the exacerbation and remission. The febrile career ends during the second or third week. It eventuates in intermittent fever in a certain proportion of cases (Loomis):

Treatment.—Quinine is all powerful in this disease. Loomis gives ten or twenty grains of quinine at a dose and repeats it every two hours until cinchonism is produced. He also gives full doses of bromide of potassium to promote sleep. Bartholow gives thirty grains of quinine the first morning, twenty the second, fifteen the third, and ten the fourth, single doses, and all taken at once.

CONTINUED MALARIAL FEVER.

Called also typho-malarial, camp, and Chickahominy fever is an association of typhoid and remittent fevers. Many doubt the existence of such a form of fever, and regard the so-called typhoid element as nothing more than a typhoid condition, liable to be developed in connection with remittent fever, as well as with many other diseases (Loomis).

Causes. Are malarial poison, and some other poison. It is met with only in malarial districts. In large cities in which

malarial diseases are prevalent, anti-hygienic conditions, such as over-crowding and bad sewerage, seem to furnish the element so essential to its development (Loomis).

Symptoms.—There are usually a distinct chill, pains in the limbs and back, headache, loss of appetite and a feeling of great exhaustion. The countenance has a peculiar waxy, yellowish tinge. There may be nausea and vomiting, abdominal tenderness in the right iliac region and diarrhœa. The tongue has first a white, then a red, and then a brown coating. Sordes may collect upon the teeth and lips. The average duration of the disease is three or four weeks (Loomis).

Treatment.—When the malarial element predominates, quinine and Warburg's tincture are the best remedies. When the typhoid element predominates, give the regular typhoid remedies.

CHRONIC MALARIAL INFECTION.

Or malarial cachexia, may be a sequel of any form of acute malarial disease. It may develop in those who have never suffered from any form of malarial fever, but who have resided for some time in a malarial district. The patient becomes anæmic with enlarged spleen and liver (Loomis).

Cause.—Malarial poisoning.

Symptoms.—Some complain of vertigo, ringing in the ears, loss of memory, disturbances of sight, loss of appetite, nausea dyspeptic symptoms, and pain and oppression in the epigastrium. Diarrhœa is often present. The sleep is disturbed. There may be pains in the back and loins. Some become easily fatigued on exertion, have shortness of breath and palpitation of the heart. There may be tingling and numbness of the limbs. Hemiplegia sometimes occurs. There may be catarrhal inflammation of the stomach, intestine and bronchial tubes. Neuralgia is quite common in this affection (Loomis).

Treatment.—The patient should be removed from a malarious district to a high, warm, mountainous region. He should wear flannel next to the skin and avoid exposure to wet and cold, and the damp air of evenings and nights. Quinine must be given in full doses. If there is anæmia iron must be given. The iodide

of iron combined with cod liver oil will be found of great service. One-half an ounce of Warburg's tincture taken daily for ten days, two hours before breakfast, is often efficacious when quinine fails. Aloes or rhubarb should be given, if the bowels are constipated. Arsenic may be tried. A nutritious diet and the daily use of brandy in small quantities are often of great service (Loomis).

PRESCRIPTIONS FOR MALARIAL FEVERS.

R Quiniæ sulphatis.....ʒiss.

Acidi sulphurici dil.....ʒss.

Spts. ætheris nitrosi.....ʒss.

Syrupi tolutan.

Aquæ.....aa...q. s....ad....ʒiij.—M.

Sig.: A teaspoonful three or four times a day. —DaCosta.

R Chinoidinigr. xL.

Resinæ podophylligr. iv.

Ferri sulph exsicgr. xx.—M.

Ft. massa et in pil. no. xx. div.

Sig.: One three times daily. —Bartholow.

R Tincturæ iodiʒvj.

Potassii iodidi..ʒij.

Aquæ cinnamoniiadʒiij.—M.

Sig.: A teaspoonful three times daily. —Charity Hospital.

R Acidi carbolicæ.....ʒj.

Tincturæ iodi compʒiij.—M.

Sig.: Four drops every four hours well diluted. —Bartholow.

R Quininæ sulphatisgr. xvj.

Ext. glycyrrhizæ.....ʒj.

Syr. rubri idæiʒij.—M.

Sig.: A teaspoonful three to five times daily for a child three years old. —J. Lewis Smith.

R Pulveris opiigr. xij.

Pulveris capsici.....gr. xxxvi.

Quininæ sulphatisʒj.—M.

In pulveres no. xii. div.

Sig.: One powder three times daily. —Alonzo Clark.

MASTITIS. (See Inflammation of Breast).**PRESCRIPTIONS FOR MASTITIS.**

R Ammonii carbonatis.....3j.
 Aqua0j.—M.
 Sig. Apply locally. —Starr.

R Cerati resinae comp.....3j.
 Olei olivæ3j-ij.—M.
 Ft. ungt.
 Sig. Apply, spread generously on soft linen. (When suppuration is threatened). —Witherstone.

R Lini farini
 Aqua bullientisaa..... q s...
 Ft. cataplasma.
 Sig. Apply as hot as can be borne. —Witherstone.

R Linimenti camphoræ..... 3viij.—M.
 Sig. Apply locally, rubbing gently from the circumference toward the nipple. (In incipient mastitis.) —Parry.

R Atropinae sulphatis gr. viij.
 Aqua rosæ 3ij —M.
 Ft. lotio.
 Sig. Apply locally, but discontinue in case of dilatation of pupils, or dryness of throat. —Starr.

MANIA. (Acute and Chronic.)

Maniacal conditions are so familiar and so readily recognized that they need not be described here. There are mainly two disorders with which acute mania is liable to be confounded, namely—acute meningitis and delirium tremens.

In acute meningitis, there are severe headache, drowsiness, tingling and numbness in the extremities, tense pulse, decided fever, etc. In acute mania, the patient has little if any fever, no spasms; his pupils are not contracted; his stomach is not irritable, and has no headache.

In delirium tremens, he is talkative and restless, has a moist skin, compressible pulse, and creamy tongue. In acute mania these conditions do not prevail (DaCosta).

PRESCRIPTIONS FOR MANIA.

- R** Potassii bromidi.....℥j.
 Tinct. cannabis indicæ.....℥j.
 Syrupi simplicis.....℥ij.
 Aquæ..... q. s., ad.....℥iv.—M.
 Sig.: A tablespoonful thrice daily. —Clouston.
- R** Hyoscyamiæ sulphatisgr. j.
 Aquæ destillatæ.....℥xij.—M.
 Sig.: Five to twelve minims hypodermically.

MARASMUS.

Is a general wasting, emaciation, or atrophy. There are many constitutional diseases which produce a condition known as marasmus. The following prescriptions are useful in this condition:

- R** Tinct. cinchonæ comp.....
 Tinct. gentinæ comp.....aa.....℥j.—M.
 Sig.: Fifteen drops to a teaspoonful in sweetened water, thrice daily. J. Lewis Smith.
- R** Syr. ferri iodidi ℥j.
 Sig.: Three to five drops in water thrice daily after eating. —Eustace Smith.
- R** Olei morrhuae.....℥ij.
 Aquæ calcis.....℥iv.
 Syr. calcis lactophosphites...ad...℥iv.—M.
 Sig.: A teaspoonful two or three times daily. —Bosley.

MEASLES.

Called also rubeola and morbilli, is an eruptive fever, with catarrhal symptoms referable to the broncho-pulmonary mucous membrane, self-limited and terminating in about two weeks (Bartholow). Measles is a disease from which few persons escape. It is essentially a disease of childhood, but it may occur at any age. A second attack is of rare occurrence. It is characterized by an eruption of red spots. It is contagious (Loomis).

Causes.—Measles appears in all parts of the globe. The disease may be communicated not only by contact with the sick, but the morbid principle adheres to articles of clothing by which

it may be conveyed long distances, or in other words it is a portable disease. Measles prevails as an epidemic, and in the sporadic form. All are not alike susceptible. Infants at the breast are not liable. The disease prevails mostly in the fall, winter and spring. The duration of the period of incubation varies from one to thirty days; the average being ten days (Bartholow and Loomis).

Symptoms. The course of this disease is definite and is divided into the stages of invasion, eruption and desquamation.

Stage of Invasion.—At the end of the period of incubation, the patient begins to suffer from cough, fever, anorexia, thirst, chills, a feeling of weariness, muscular soreness, headache and backache. There is an acrid muco-serous discharge from the nostrils. The eyes are irritable, reddened and watery, and have a brilliant appearance. The buccal and faucial surfaces are injected. Sore throat is complained of, and the voice is a little husky. The bronchitis, laryngitis and coryza which accompany this disease are due to the efflorescence which takes place on the mucous membrane of the air-passages prior to its appearance on the skin. There may be nausea and vomiting. The face is flushed and somewhat swollen. Epistaxis is frequent. The average duration of the stage of invasion is three or four days. It may, however, be a single day or seven days; then the eruption appears (Flint, Smith and Loomis).

Stage of Eruption. The eruption is first seen upon the forehead, chin and sides of the nose, then upon the neck, chest and over the body, afterwards upon the legs and arms, and lastly upon the back of the hand. The eruption on the face feels like small shot early in the disease. The eruption fully develops in 36 to 48 hours, and then begins to fade. Convulsions may occur in this stage. The eruption has at first an appearance of minute red dots and specks which soon enlarge to the size of a pin head or to three pin-heads; they disappear upon pressure and return when the pressure is removed. These spots are usually discrete and separated by tracts of normal skin. The eruption is sometimes attended with considerable itching. The efflorescence may be seen on the hard and soft palate one or two days before it appears on the face. In this stage the constitu-

tional and local symptoms increase in severity. The face is swollen, the eyes still watery and sensitive to light; the tongue is covered with a moist thin fur, and its papillæ are prominent, though less so than in scarlet fever. The cough continues, the appetite is lost, and thirst is intense. A severe form of the disease is characterized by the occurrence of petechiæ and hemorrhage in various situations. In these cases the eruption presents a livid appearance, and is called hemorrhagic rubeola, or rubeola nigri or black measles. Some writers describe measles without catarrh, and on the other hand with catarrh, but without the rash. On the fourth day of the eruption it begins to fade, and the stage of desquamation commences (Flint, Smith, Loomis and Bartholow).

Stage of Desquamation.—The duration of this stage is between four and eight days. It is characterized by a scanty furfuraceous exfoliation of the epidermis. In this stage all the symptoms rapidly abate, but the cough continues several days (J. Lewis Smith).

Complications. The most important complications are bronchitis, capillary bronchitis, broncho-pneumonia, meningitis, ophthalmia, otorrhea, entero-colitis, eclampsia, diphtheria, and acute tuberculosis. Nephritis is a rare complication (Smith).

Prognosis. Is always good in uncomplicated cases, but the various complications render the prognosis unfavorable (Smith).

Treatment. Uncomplicated cases require little medical treatment. The child should be kept in an airy room at a uniform temperature of about 70° F. The diet should be mild and for the most part liquid. Stimulation by wine or brandy may be necessary. For the troublesome cough, flaxseed tea or infusion of slippery elm bark, with lemon juice added may be given. A small Dover's powder is good for the cough. The chest should be covered with cotton wadding, after rubbing on camphorated oil. If the patient complains of itching and burning of the surface, he may be frequently sponged with tepid water. If there is thirst, cold water may be freely taken in small quantities at a time. Inhalations of steam are most useful for the lung complications. In capillary bronchitis and pneumonia the following prescription is most serviceable:

R Ammonii carbonat.....gr. xvj. ʒss.

Aqua puræʒij.—M.

Sig.: Give one teaspoonful in three or four of milk every hour or two. The chloride of ammonium is also good in double the dose of carbonate (Smith). If the temperature is high during the initial stage, and the cough troublesome, the following is most effective :

R Tinct. aconit rad. ʒj.

Ext. ipecac fld.....ʒij.

Tinct. opii deodoratʒij.—M.

Sig.: Six drops every hour or two. —Bartholow.

During the time of the eruption, if the temperature is high the skin should be rubbed every four hours with lard, suet, vaseline or cocoa-butter. A simple saline laxative ought to be given. Quinine may be used to reduce the fever (Bartholow Loomis and Smith).

MELANCHOLIA.

Is a form of insanity characterized by a condition of mental depression. Melancholiacs have gloomy visages.

Causes. —Diseases of the brain, anæmia, and physical prostration.

Symptoms. The patient is dreadfully depressed and his expression is completely altered. He suffers from no appreciable disease. Usually he gazes toward the ground. The tendency of the melancholic is frequently to suicide.

Treatment.—It is necessary to isolate melancholic patients from their friends and relatives. The use of opium in the form of the tincture, in gradually increasing doses, is productive of the best results. A prolonged warm bath (one-half to two hours) is a good hypnotic agent in melancholia. Frequent feeding is of the greatest importance (Starr). The bromide of potassium is most serviceable for the unendurable despondency (Ringer).

PRESCRIPTIONS FOR MELANCHOLIA.

R Quinæ valerianatis

Ferri valerianatis

Zinci valerianatis -aa gr. xx.—M.

Ft. massa et in pil. no. xx. div.

Sig. One pill three times daily. —Witherstone.

- R** Potassii bromidi..... ʒij.
 Tinct. calumba..... ʒiij.
 Spts. ammoniac aromat..... ʒij.
 Aquæ cinnamoni..... ʒiij.
 Aquæq. s., ad.....ʒviij. -M.
 Sig.: A wineglassful two or three times daily. —Lawrence.
- R** Tinct. ferri chloridi.....
 Syr. simplicis—aa..... ʒj —M.
 Sig.: Twenty drops well diluted thrice daily. —Bartholow.

MENINGITIS.

Inflammation of the pia mater is usually called meningitis. The term pachymeningitis is applied to inflammation of the dura mater (Loomis). Sometimes inflammation of the pia mater is denominated leptomeningitis. It may be acute or chronic. Acute cerebral meningitis is also called simple meningitis of the convexity, cerebral fever, and arachnitis.

Causes.—Acute alcoholismus, prolonged and intense mental anxiety and grief are among its predisposing causes. Injuries of the cranial bones, as fractures, severe blows, or punctured wounds are the most frequent exciting causes. Diabetes, cerebral tumors, disease of the cranial bones, suppuration of the middle ear, and eyeball, and large carbuncles about the cranium have caused it. Meningitis may occur as a complication, in measles, small-pox, scarlet fever, ulcerative endocarditis, Bright's disease, acute pneumonia, typhus, typhoid fever, diphtheria, pyæmia, and rheumatism. Long continued exposure to intense heat of the sun may cause it. It is more common in males than in females. It is most frequent in early adult life and in young children (Flint and Loomis).

Symptoms.—May be divided into three stages of headache, delirium, and coma. It may be ushered in by a distinct chill or chilly sensations. The first prominent symptom, as a rule, is a violent headache. With the headache there is vertigo, intense photophobia, loud ringings in the ears, nausea, and projectile vomiting. The face is flushed, and has an anxious expression. The conjunctiva are injected, and the pupils are contracted. The bowels are constipated and the abdomen is retracted. The fever

is more or less intense, and the pulse is accelerated, strong and full. The carotids and temporal arteries pulsate strongly, and the head is hot. The duration of this stage is one or two days.

In the second or stage of delirium, there are great restlessness and mental confusion. The delirium is sometimes wild, simulating acute mania. In adults, muscular twitchings of the face and extremities are present in this stage; the eyeballs roll about vaguely, the flexor-muscles are often powerfully contracted in one or both limbs, and there may be opisthotonos. The temperature rises to 104° F., the pulse becomes more frequent and irregular; the abdomen is retracted, the vomiting continues *projectile*. Herpetic eruptions appear. This stage lasts from one to three days.

The third stage is called the *stage of coma*. It comes on gradually. The delirium and headache subside. There is a tendency to stupor and deep sleep. The pulse becomes slow, irregular and intermittent. The pupils are greatly dilated. There is rigidity of the muscles of the back of the neck. Strabismus and loss of vision may occur. The patient rolls his head and grinds his teeth and picks stupidly at the bedclothes. Gradually the coma becomes profound. *Subsultus tendinum* is marked. As the disease advances, the pulse may run up to 160 or 170 or more; the Cheyne-Stokes respiration of ascending and descending rhythm becomes established. The expirations are puffing. The body is bathed in cold sweat (Flint and Loomis).

Differential Diagnosis.—Acute meningitis may be confounded with cerebral hyperemia, acute uræmia, variola and delirium tremens. From cerebral hyperemia, meningitis is differentiated by the higher temperature, longer duration, and the symptoms of depression succeeding to a stage of excitement. In uræmia the temperature is usually below rather than above the normal; the urine is scanty and contains albumen, and there is or has been dropsy. In small-pox, the face is flushed, the pulse full and bounding, there is intense pain in the back and loins, the vomiting is retching in character, and at the end of the third day the characteristic eruption appears. In delirium tremens, the patient imagines persons and animals about him, and is wild in his gestures and utterances. The surface is bathed in a profuse,

clammy sweat in delirium tremens; it is hot and dry in meningitis. In delirium tremens the temperature, pulse rate, and pupils are normal, and there is no headache (Bartholow and Loomis).

Prognosis.—Is very unfavorable. The duration varies from two days to four weeks; fatal cases rarely last more than eight days. Strabismus, hiccough and local paralysis are very unfavorable symptoms.

Treatment. The head should be raised; the room dark and quiet. The ice-bag should be put to the head. Leeches may be applied to the nape of the neck and mastoid bone. The bowels should be moved freely. Blisters may be applied to the back of the neck. Bartholow recommends during the stage of excitation, tincture of aconite (two drops) every two hours. He also gives bromide of potassium (ʒss.) and fluid extract of ergot (ʒss.) every four hours. Iodide of potassium in five to ten grain doses four or five times daily may be given.

PRESCRIPTIONS FOR ACUTE CEREBRAL MENINGITIS.

R Acidi tannici3j.

In capsulas no. xx. div.

Sig.: A capsule every three hours, with ice to head. —Lardier.

R Sodii bromidi3ij

Chloral hydratis.....3j.

Syr. auranti cort.....3j.

Aqua.....q. s., ad.....3iij.—M.

Sig: A dessertspoonful every hour or two until excitement abates. —Herrman.

R Tinctura ferri chloridi.....3j.

Sig.: Twenty to thirty minims every two hours. —Klapp.

Chronic Cerebral Meningitis. Is an interstitial inflammation of the pia mater which causes thickening and opacity of the membrane (Loomis).

Causes.—It is a disease of adult life, especially after fifty years of age. It may be a combination of chronic alcoholism, syphilis, rheumatism, gout and chronic Bright's disease (Loomis).

Symptoms. Are obscure. The patient grows dull, stupid and apathetic. There is headache and a constant desire to sleep.

Vomiting occurs. There is muscular weakness, vertigo and tinnitus aurium (Loomis).

Treatment.—The patient must be kept quiet mentally, and the diet must be fluid and nutritious. The bichloride of mercury and iodide of potassium are considered the best remedies. The bowels and urine need careful attention (Loomis).

Tubercular Meningitis.—Called also basilar meningitis, is an inflammation of the basal pia mater caused by gray miliary tubercles and occurring most frequently in children (Loomis).

Causes.—It is rare before the first and after the fifth year. It occurs most frequently in scrofulous children. Any debilitating disease may excite it. The immediate cause is the same as in all forms of tuberculosis (Loomis).

Symptoms.—There is loss of appetite; the breath is offensive; the tongue coated, constipation and diarrhoea alternate. The child becomes dull, languid, and desires quiet. The face has an anxious appearance. There may be convulsions. In the first, or irritative stage, the patient will moan and clasp the head with his hands. He awakes with a piercing hydrocephalic cry, grinds his teeth, rolls his eyeballs, and the facial muscles are contorted. The hands will be clenched. The abdomen is retracted and hard. Projectile vomiting occurs, and resists all treatment. The pupils are contracted, there is photophobia. In the second, or stage of depression, the muscles at the back of the neck become rigid; the head is rolled slowly from side to side; sometimes distinct opisthotonos occurs. The pulse becomes slow; convulsions, ptosis, strabismus, loss of sight, anæsthesia and local paralysis may occur. There is difficult swallowing. Cheyne-Stokes' respiration is common. There is anorexia, the tongue and mouth are covered with sordes; and the passages are unnatural and offensive. In the third, or stage of coma, the pulse runs up to 150 or 170 per minute, is feeble, small and irregular. The pupils are widely dilated. The breathing is sighing or snoring in character. Dysphagia is marked. The contents of the bladder and rectum are passed involuntarily; the body is covered with a clammy sweat. The abdomen becomes tympanitic and subsultus tendinum is marked (Loomis).

Differential Diagnosis.—Tubercular meningitis may be mistaken for acute meningitis, gastro-enteritis, acute Bright's disease and infantile remittent fever.

Acute meningitis is sudden in its onset and rapid in its progress, not so in tubercular. The ocular symptoms and the boat-shaped abdomen are more prominent in the tubercular than in other forms of meningitis. In gastro-enteritis, there are diarrhoea, abdominal pain and tenderness. But headache, contracted pupils, photophobia, the slow irregular pulse, reflex movements during sleep, projectile vomiting and the hydrocephalic cry of tubercular meningitis are wanting.

In Bright's disease, the œdema, with the presence of albumen and casts in the urine, will establish the diagnosis. In infantile remittent the vomiting is retching in character, diarrhoea is prominent, and the discharges pea-soup in character, the abdomen is distended and tender; there is great thirst, rapid pulse and normal pupils (Loomis).

Prognosis.—It is one of the most fatal diseases of childhood. The duration varies from five days to four weeks (Loomis).

Treatment.—The prophylactic treatment is cod-liver oil, and the patient kept out of doors as much as possible, also good hygienic surroundings. The treatment is symptomatic after the disease is developed. The bowels must be kept open, and absolute quiet enjoined. Ice-bags may be put to the head. Opium and bromide of potassium are serviceable in the stage of excitement (Loomis).

PACHYMENINGITIS.

Is an inflammation of the dura mater. There are two forms, namely: Pachymeningitis, externa and interna.

Causes.—Pachymeningitis externa is caused by injury and disease of the cranial bones, by suppuration of the internal or middle ear, or of the orbit. The causes of the internal form are chronic alcoholism, pyæmia and Bright's disease. It is rare before forty, most frequently between sixty and eighty (Loomis).

Symptoms.—Somnolence, headache, dizziness, photophobia, followed by delirium, and perhaps convulsions and coma, are the

chief symptoms. The course of the disease varies from one day to a year or more (Flint).

Treatment. For the external form, rest, a mild diet, a free purge, and cold to the head are indicated. Trephining may sometimes save life. If there are symptoms of suppuration alcoholic stimulants, quinine, and opium should be given. The external form must be treated symptomatically. The prognosis is unfavorable in both forms (Loomis).

SPINAL MENINGITIS.

Is an inflammation of the spinal pia mater and arachnoid. It may be acute or chronic.

Causes. Acute spinal meningitis may be caused by a fall, blow, dislocation, fracture or other injury to the vertebræ, or concussion; by any disease of the spine, such as caries, cancer, prolonged exposure to cold—especially damp cold—or brief exposure to intense cold when the body is heated, as well as exposure to intense heat. Operations for spina bifida have been followed by rapid and fatal spinal meningitis. Syphilis, venereal excesses, alcoholismus, chorea, tetanus, and hydrophobia may cause it.

The chronic form may follow the acute (Loomis).

Symptoms.—More or less pain is felt in the spine radiating therefrom to the extremities. The pain is increased by movements of the body and is constant. The surface of the body becomes hyperæsthetic, and the reflexes are increased. There may be a chill, nausea, vomiting, fever, and the muscles along the spine become rigid. There is constipation, and the abdomen has the well known boat shaped appearance. The duration of this disease is seven to ten days. The majority of cases are fatal (Flint).

Treatment.—The indications for treatment are the same as in acute cerebral meningitis. The patient should be put to bed in a cool room and a brisk purge administered. Ice or counter irritation may be applied along the spine. Ergot and belladonna are said to produce contraction of the arterioles, and retain the inflammatory process.

When the symptoms denote the presence of the products of inflammation, vesication of the spine and iodide of potassium in large doses are indicated. Warm baths are grateful to patients (Flint and Loomis).

The different varieties of meningeal inflammation and the terms applied to each may be made clearer by the following definitions:

1. By the term meningitis is usually understood inflammation of the pia mater or of the pia mater and arachnoid.

2. By the term leptomeningitis is meant inflammation of the pia mater, or of the pia mater and arachnoid of the non-tubercular variety.

- 3 By the term simple cerebral meningitis is understood inflammation of the pia mater either of the convexity or of the base of the non-tubercular variety.

4. By the term tubercular meningitis is meant an inflammation of the basal pia mater caused by tubercle bacilli.

5. By the term pachymeningitis is meant inflammation of the dura mater.

The same terms are applied to spinal meningeal inflammation.

MYELITIS.

Is an inflammation of the substance of the spinal cord. It may be acute or chronic.

Forms.—When the inflammation occurs chiefly in the central gray matter, it is called central myelitis; when the white matter and meninges are involved it is called cortical myelitis; when both white and gray matter of the greater portion of the cord are inflamed the process is called diffuse myelitis; when the inflammation is confined to the anterior-horns of gray matter, it is called anterior polio-myelitis; when all the tissues of the cord over a circumscribed space are involved it is called transverse myelitis; when there are spots of inflammation along the cord at various points it is called disseminated myelitis. Acute myelitis in the majority of cases, appears under the form of softening of the cord. Chronic myelitis, on the other hand appears as indurated or sclerosis (Flint).

Acute Myelitis.—**Causes.** Acute myelitis is a rare disease. It is more common in males than in females. It is a disease of children and young adults. In children it takes the form of acute anterior polio myelitis or spinal paralysis. Injuries of the cord from contusions, blows, fractures of the vertebra, intense and prolonged muscular action, prolonged exposure to cold, as in sleeping on damp ground, sudden chilling of the surface when overheated and excesses in coitus are given as causes. It is said that suppression of the menses and checking hemorrhoidal fluxes may cause it. Acute infectious disease may give rise to myelitis. Continued jarring of the spine from travel on railways will produce it (Bartholow, Loomis and Flint).

Symptoms.—Acute myelitis usually begins with fever, intense pain in the back, the sensation of a girdle around the trunk, tenderness over certain of the vertebrae, pains and muscular soreness of the limbs, tingling, formication, a feeling of weight and dragging in the rectum and bladder, and priapism. Preceding paralysis, the muscles which are to be paralyzed are sometimes affected with tremor or spasm. The early occurrence of paralysis is a distinguishing feature. It occurs within a day or two, and sometimes within a few hours after the symptoms have pointed to a spinal affection. The paralysis is mostly paraplegic, affecting both bladder and rectum, is motor and sensory, and may develop so rapidly that in 48 hours the patient will be unable to move his legs. Loss of reflex excitability is an effect of destruction of the gray matter in the lower part of the cord. Notable wasting of the paralyzed muscles is indicative of destruction of the gray matter. In myelitis, the parts exposed to pressure take on gangrenous inflammation. Acute myelitis is a progressive disease, and may run a rapid course, destroying life in a few days or weeks. Complete recovery is rare (Bartholow, Loomis and Flint).

Differential Diagnosis.—Acute myelitis may be confounded with acute spinal meningitis. In meningitis, there are acute pain on motion, rigidity, spasms and contractions of the muscles of the back, hyperæsthesia, and incomplete paralysis; in myelitis, there is no pain on motion, the muscles are flaccid and relaxed,

there are anæsthesia and paraplegia, or hemiplegia (Loomis and Bartholow).

Prognosis.—In acute myelitis death may occur in twelve to thirty hours, or be delayed two or three weeks (Loomis).

Treatment.—Absolute rest must be enjoined. Frequent applications of hot water to the spine is very serviceable. The ice-bag to the spine is recommended. Bartholow recommends a mustard plaster the length of the spine and four inches wide, to be applied twice daily. Dry cupping over the spine and leeches are indicated. Internally ergot and belladonna have been highly recommended. Authorities recommend a tablespoonful four times daily of the infusion of digitalis. Twenty to thirty grain doses of quinine may have a good effect at the very beginning of the congestive stage. Purgatives should be given. Bed-sores must be prevented. Cystitis may be avoided by the frequent use of the catheter and washing out of the bladder (Bartholow, Loomis and Flint).

CHRONIC MYELITIS.

Causes.—Are much the same as those of acute myelitis.

Symptoms.—Pains in the limbs simulating rheumatism, muscular weakness, tingling, formication, numbness of the limbs, and a girdle sensation are the first symptoms. These are followed by paraplegia, muscular atrophy, cystitis and chronic bed-sores. Patients with chronic myelitis always complain of cold feet.

Prognosis.—Always unfavorable. It may continue from two to ten years (Loomis).

Treatment.—The treatment for the acute will be of service in the chronic form.

Chronic Myelitis includes several distinct affections, among which are posterior spinal sclerosis (which has been considered under the name of locomotor ataxia), multiple cerebro-spinal sclerosis, sclerosis of the lateral columns, anterior polio-myelitis, and progressive muscular atrophy.

MULTIPLE CEREBRO-SPINAL SCLEROSIS.

Is a malady characterized by the formation of isolated patches or nodules of sclerotic tissue in the brain, pons, medulla, cerebellum, and spinal cord (Bartholow). The nodules vary in number and range in size from minute objects to the size of a walnut (Loomis).

Causes.—It is very rare after the age of forty-five and before ten. Heredity is a predisposing cause. The exciting causes are damp and cold, sudden chilling of the body, traumatism, and severe and long-continued brain work or physical exercise. Moral emotions, chagrin, anxiety, and continued jarring of the body are thought to produce the disease (Bartholow and Loomis).

Symptoms.—The disease may come on gradually or suddenly. If it appears gradually, the patient complains of headache, vertigo, muscular weakness, mental disturbance, and queer feelings, as formications, itchings, burnings, etc., in the limbs. There may be nausea and vomiting. There is a loss of co-ordinating power, and the patient cannot control his hands in writing, or his feet and limbs in walking. There is a shaking tremor; this tremor is peculiar in not occurring until an attempt is made at voluntary motions, and at once ceasing when the parts are allowed to rest. Even the head participates in it. The voice is changed, and the patient talks in a low monotone or a whisper, dividing the words as in scanning a line of poetry. Amblyopia, diplopia, nystagmus, and inequality of the pupils are frequent symptoms. In the advanced stage, vesical symptoms, acute bed sores, loss of sexual power and control of the sphincter become marked symptoms.

Differential Diagnosis.—Cerebro-spinal sclerosis may be mistaken for paralysis agitans or locomotor ataxia. In paralysis agitans the fine tremor exists when the patient is at rest, and is not accompanied by shaking of the head; while in the shaking of the cerebro-spinal sclerosis the head is always involved, the symptom ceasing as soon as the patient is at rest. The former is rare before forty; the latter is rare after forty. Changes in the voice and speech and ocular symptoms are present in cerebro-

spinal sclerosis, and absent in paralysis agitans. In locomotor ataxia the peculiar shaking tremor, impairment of voice and speech, and nystagmus that belong to disseminated sclerosis are absent. In the former there are the girdle sensation about the trunk, the lightning-like pains and the peculiar double beat in walking, all of which are absent in the latter (Loomis and Bartholow).

Prognosis.—The disease is progressive and always terminates in death. The duration varies from one year to twenty, but the average is five to ten years. The patient is apt to die from an intercurrent disease (Bartholow and Loomis).

Treatment. Various remedies have been proposed for this malady. Erb gave arsenic hypodermically in one case with improvement. Hammond thinks the chloride of barium does good. According to Bartholow the chloride of gold and sodium, with small doses of corrosive sublimate, is most useful. Cod-liver oil, nitrate of silver, phosphate of zinc and galvanism have all been used by authorities.

LATERAL SPINAL SCLEROSIS.

Called also by Charcot, spasmodic tabes dorsalis, and by Erb spastic spinal paralysis, is a disease having similar lesions to those of posterior spinal sclerosis, but a different seat. The site of the lesions is the lateral white columns, and the changes consist in gray degeneration.

Causes. It develops under the same conditions as posterior spinal sclerosis. It is more common in men than in women, and occurs between the ages of twenty and fifty. Traumatism and exposure to wet and cold are given as causes (Loomis).

Symptoms.—There will appear first weakness and paresis of the lower extremities; then twitching of the muscles and muscular rigidity follow. The tendon reflexes in this disease are much exaggerated. The sensibility is unaffected; there is no atrophy of the muscles; and the functions of the rectum, bladder and sexual system remain unaltered. There is marked ankle clonus, in which the muscles of the calf or the whole limb are put in a state of tremor when the foot is flexed, or when the patient puts

his toes to the ground. The patient drags his limbs. The duration of the disease extends over many years (Bartholow, Loomis and Flint).

Treatment.—The galvanic current is most useful. Iodide of potassium, arsenic and cod-liver oil, with careful attention to rest and diet, are to be recommended. Rubbing and massage afford great comfort. Calabar bean may be given for the cramps (Loomis).

ANTERIOR POLIOMYELITIS.

Called also infantile spinal paralysis, is a disease occurring in children suddenly, and is due to an inflammation of the anterior cornua of gray matter of the cord. It may, however, occur in adults, but much less frequently (Bartholow).

Causes. This is a disease of the first three years of life. Cold, dentition and traumatism have been assigned as causes. It is frequently developed during convalescence from the exanthemata and other acute febrile affections (Loomis).

Symptoms. The usual onset of the disease is a fever which lasts a day or two, and on recovery from which it is observed, with surprise, that the child is paralyzed. There may be headache, pain in the back, and limbs, nausea, vomiting, vertigo, delirium, convulsions and coma. In some cases the paralysis occurs without prodromes. If only one lower limb is involved at first, the other soon becomes so, and it is not unusual for all four extremities to be affected at once. Sensibility is not affected. The bladder may be paralyzed, and the urine retained. Paralysis is complete at once, and soon begins to lessen, some restoration of power taking place in from one to three weeks. All the paralyzed parts may be restored, or one arm and one leg may remain paralyzed. The muscles remaining paralyzed are affected permanently, and by a rapidly progressive atrophy. The paralyzed parts become cool, to the touch, and have a blue cyanosed appearance. The muscles waste till there is nothing but connective tissue and fat, and the growth of the limb is arrested. The mildest cases recover in a few weeks or in a month or two (Bartholow).

Treatment.—From $\frac{1}{4}$ to 4 grains of quinine and from $\frac{1}{2}$ to $\frac{1}{4}$ grain of belladonna extract have acted best according to Bartholow. Hot douche to the spine, galvanism, and rest, with massage and faradism are of service. Strychnia may be injected into the paralyzed parts two or three times a week. Tonics are clearly indicated (Bartholow).

PROGRESSIVE MUSCULAR ATROPHY.

Called also wasting or creeping palsy, is a disease characterized by a progressive and chronic wasting and atrophy of the voluntary muscles due to atrophic changes in the anterior cornua of the cord (Loomis).

Causes. It is an hereditary disease, and is met with chiefly in males. The period of greater liability is between the ages of thirty and fifty. The disease may be excited by over-exertion of a group of muscles in certain occupations. Injury to the spine and exposure to cold and wet are said to excite it. In children the disease is invited to the lower limbs by prolonged effort on the legs. Exhausting diseases, the poison of lead and syphilis, and certain dyscrasias seem to exert an influence in developing the disease (Bartholow and Loomis).

Symptoms.—The disease usually comes on insidiously, the first indication of its presence being wasting and loss of power of some muscles; as a rule those of the hand are first atrophied, then the muscles of the forearms, arms and shoulders. Just before wasting begins, the patient will remember that he had for weeks or months a feeling of slight numbness or formication, and that his fingers have seemed clumsy. The patient complains of a sensation of cold air being blown on him. Wandering pains frequently precede the wasting of the muscles. A peculiar fibrillary tremor is present early (Loomis).

Prognosis. Is extremely unfavorable. Its course is slow. The average duration is five years. As its name implies, it is always progressive (Loomis).

Treatment. Bartholow recommends injections of a solution of $\frac{1}{4}$ glycerine three times a week into the wasting muscles. A descending current of galvanism should be applied to the whole

length of the spine daily, for two minutes. Massage, using with friction lard, should consist of friction, kneading and tapping the muscles. Hot douches to the spine and rubbing a wet pack over the affected members are also highly to be commended.

MENORRHAGIA AND METRORRHAGIA.

Menorrhagia is an increased flow of the blood and mucus occurring at the menstrual period.

Metrorrhagia is a flow of blood from the genitalia in the inter-menstrual period.

Causes.—May be general or local. The general causes are hemorrhagic diathesis, scurvy, fevers, tuberculosis, super-lactation, icterus, Bright's disease, obesity and cachexia. The local causes are reflex stimulus from the genital organs or simply from nervous derangement, as at puberty, first intercourse or the menopause. Reflex stimulation from the mammary glands during lactation will cause metrorrhagia. Other local causes are endometritis, fibromata, cancer, ovarian tumors, and affections of the Fallopian tubes (Pozzi).

Treatment.—The cause should always be sought and treated. The local measures are prolonged irrigation of hot water (110° to 120° F.) and tampon of the vagina. Astringents, such as tincture of iodine with glycerine or Monsel solution diluted, may be applied to the endometrium. The general measures are: Rest in bed with elevation of the pelvis; opium in the form of laudanum, rectal injections; ergot by the stomach and infusion of digitalis leaves. In many cases fluid extract of hydrastis given in half-drachm doses every four hours during the time of the flow, and in twenty-drop doses before meals in the intervals, is very efficient. Oil of erigeron in five-minim capsules every three hours is also effective (Pozzi).

PRESCRIPTIONS FOR MENORRHAGIA.

R Extracti ergotæ fluidi..... ℞.
 Ammonii chloridi..... gr. x.
 Sodii bromidi gr. v.—M.

Sig: For one dose, to be taken in half tumbler of water: may repeat every two hours.
 —Goodell.

- ℞ Ext. gossypii fld.....
 Syr. simplicisaa.....℥j.—M.
 Sig.: A teaspoonful every four hours. —Parvin.
- ℞ Ext. rhois aromat fld.....℥iv.
 Sig.: A teaspoonful every hour for a few doses, then every three
 or four hours. —Shoemaker.
- ℞ Acidi gallici.....℥ss.
 Acidi sulphurici dil.....℥j.
 Tinct opii deodorat℥j.
 Inf. rosæ comp℥iv.—M.
 Sig.: A tablespoonful, every four hours. —Bartholow.
- ℞ Tinct hamamelis.....℥ij.
 Sig.: One-half to one teaspoonful thrice daily. —Ringer.
- ℞ Ext. ipecac fld.....℥ij.
 Ext. ergotæ fld.....℥iv.
 Ext. digitalis fld.....℥ij.—M.
 Sig.: A half to one teaspoonful as required until emesis occurs.
 —Bartholow.
- ℞ Potassii bromidi.....℥ij.
 In pulv. no. xii. div...
 Sig.: A powder in a wineglassful of water three times daily. (In
 flooding of young women who menstruate too often as well as too
 copiously). Begin before the period and continue till it is over.
 —Ringer.
- ℞ Tinct. sabinæ.....℥ss.
 Sig.: Five to ten drops in cold water every half to three hours.
 —Phillips.

MIGRAINE. (See Headache).

MITRAL DISEASE. (See Valvular Diseases).

MORNING SICKNESS.

The nausea and vomiting which occur in pregnant women on waking in the morning are called morning sickness.

It is due to spasmodic contractions of the diaphragm and stomach. It usually recurs daily during the first three months of pregnancy and then gradually disappears (Lusk).

Treatment.—Nearly every drug of the Materia Medica has been tried at one time or another for the nausea and vomiting of pregnancy. Spraying the pit of the stomach with ether is effective in some cases. To many, ice-cold effervescent drinks are

grateful. Lusk orders ten grains of the subnitrate of bismuth combined with five to ten grains of oxalate of cerium to be taken ten minutes before eating. He also gives ten drop doses before meals of the tincture of nux vomica in cases of gastric catarrh. Drop doses of Fowler's solution at meal-time are said to exert considerable influence in allaying stomach irritability. After eating, digestion may be promoted by ten grains of pepsin given alone or with dilute muriatic acid. If the vomiting is literally uncontrollable, the patient should be placed at rest in bed (Lusk).

PRESCRIPTIONS FOR MORNING SICKNESS.

- R** Cocaini muriatis.....gr. j.
 Extracti belladonnæ ʒvi.—M.
 Sig.: Apply locally to the cervix uteri morning and evening.
 —Fenn.
- R** Cocaini muriatis.....gr. j.
 Aquæ. ʒi.—M.
 Sig.: A teaspoonful three times daily before meals. —Parvin.
- R** Atropiæ sulphatis.....gr. j.
 Morphię sulphatisgr. iv.
 Acidi sulphurici aromat.....ʒiij.
 Aquæ. ʒv.—M.
 Sig.: Ten to twenty drops in water thrice daily. —Boys.
- R** Cerii oxalatis.....gr. xxiv.
 Extracti hyoscyami.....gr. xxxvj.—M.
 Ft. massa et in pil. no. xii. div.
 Sig.: One pill twice daily. —Goodell.

MUMPS.

Called also parotitis, or parotiditis, is a constitutional or blood disease with local manifestations. It is a specific inflammation of the parotid gland (rarely are the other salivary glands involved), self-limited, and characterized by a tendency to migrate into the mamma or testes. Parotitis is of two varieties, specific and non-specific (Smith and Bartholow).

Causes.—It occurs chiefly in childhood, youth, and early manhood, cases being rare in infancy and old age. It is highly

contagious, and commonly occurs as an epidemic. It prevails most in crowded localities and among those who live in cold damp cellars. It is probably a microbic disease (Smith and Loomis).

Incubation.—The period of incubation varies from ten to eighteen days (Flint).

Symptoms. Mumps begins with languor and fever, and usually chills or chilly sensations. There are frequently dull pains in the limbs, loss of appetite, headache and delirium. In 36 to 48 hours, there is a sensation of stiffness about the angle of the jaw, followed by pain and swelling. The pain is increased by speaking, swallowing and by pressure. The disease reaches its height in from three to five days, and the swelling of the gland begins to subside on the seventh or eighth day. A metastatic orchitis may occur in males after puberty. In females, the mammary gland and ovary may become inflamed. It is one of the diseases which affect the same person but once. Non-specific parotitis developing during some severe constitutional disease, shows a tendency to suppurate from its beginning, and discharges laudable pus (Bartholow, Flint, Loomis and Smith).

Prognosis.—Is favorable in the specific variety; but very unfavorable in the non-specific (Loomis).

Treatment.—Warm applications to the affected parts will give relief. Morphine and quinine may be given internally. A mild saline cathartic may be administered. The diet should be non-stimulating. Inunctions of oil to the swollen gland are useful. A mustard foot-bath should be given (Bartholow and Loomis).

PRESCRIPTIONS FOR MUMPS.

R Antipyrine5j.
Potassii bromidi..... ʒiij.—M.

In pulvis no. xv. div.

Sig.: Give one powder in water every three hours till the fever abates. —J. Lewis Smith.

R Hydrargyri cum cretæ..... gr. iv.
Sacchari lactis.....gr. xx.—M.

In pulvis no. xii. div.

Sig.: One powder three or four times daily. —Ringer.

MYALGIA.

Called also muscular rheumatism, is a rheumatic affection of the voluntary muscles accompanied by pain and tenderness, but by no other evidences of inflammation. It has been named according to its seat, torticollis (wry-neck), cephalalgia, pleurodynia, lumbago, etc. (Loomis).

Causes.—Exposure to cold and damp draughts are often the exciting causes of an attack. Over-fatigue and sudden straining of a muscle may induce it. Malaria may cause it. It may come on suddenly in a rheumatic or gouty subject (Loomis).

Symptoms.—An attack usually comes on suddenly with severe, deep-seated pain in the muscles affected. The pain is of a stretching or tearing character, increased by movement or pressure. It is more severe at night. The pain may shift or remain fixed in certain muscles. Certain positions mitigate the pain. Lumbago is the severest variety. In all varieties there is pain and rigidity of muscles, but no fever or constitutional symptoms. The duration of myalgia varies between a few hours and a week. The duration of the chronic form is indefinite (Loomis).

Treatment.—In the young, cod-liver oil acts as a preventive. A hot air or Turkish bath will be of service at the beginning of an attack. In chronic cases the favorite drugs are arsenic, sulphur, and guaiacum. Quinine is almost a specific in the malarial form. The patient should wear flannel and sponge the body with cold water every morning.

In lumbago hot applications and anodyne liniments will often give relief. A hypodermic of morphia may be required. The constant and faradic currents may give relief (Loomis).

MANIA-A-POTU. (See Delirium Tremens.)

MASTURBATION.

Called also self-abuse or self-pollution, is not a disease. It signifies that an orgasm is produced by means of friction with the hand. It does not necessarily produce disease unless it is carried to excess. Masturbation is not confined to man. Monkeys, bears and goats indulge in it. Turkeys practice it

upon a round, smooth stone. In the human being, both sexes practice it. Females are much less given to it than males. The majority of women have very little passion, and suffer the approaches of a lover or husband largely as a matter of complaisance. As a rule, the female learns what passion is only as the result of education after marriage. With the male it is different. He often has erections in childhood and sexual yearnings long before puberty. A boy, when handling himself during erection, is apt to find the sensation agreeable and go on until he has formed the habit. Male babies are sometimes handled by their nurses to keep them quiet, and this begets the habit. Boys usually receive instruction from other boys at school, and this is the most common incentive. A large proportion of mankind have masturbated more or less at some period of life, and it is safe to assert that at least ninety per cent. of such masturbators are not injured by the habit. Sexual indulgence in the natural way will produce evil effects if carried to excess, yet it is probable that sexual intercourse is not only harmless, but even beneficial in moderation. It is not the loss of seminal fluid which is of the first importance in producing disease from sexual excess, but the nervous shock of the oft-repeated orgasm.

Babies and young children lose no seminal fluid, women have none to lose, yet in all these, evil results follow excesses, as certainly as they do in the male after puberty.

Any succession of nervous shocks as sharp and decisive as the sexual orgasm, such as joy or fear, would shatter the vitality and nervous tone of an individual as much as masturbation. The cunningly conceived advertisements in newspapers, books and circulars by quacks, implant errors in the mind concerning this vice which years of sober after thought are scarcely able to eradicate. Masturbation is not confined to youth; middle and old age are not free from it. The use of tobacco and alcohol inflicts as much injury upon the human race as does the secret vice, if both are carried to excess.

The chief reason why so much is said of venereal excess by masturbation, and so little of sexual excess in the natural way, is, that the former is so much more common and not that the act itself is physically more harmful. The former may be practised

on all occasions, even in company, by the hand in the pocket, in bed or in solitary places, but the latter requires the consent of two individuals, and opportunities which relatively are hard to find (Keyes).

Symptoms.—A young child who masturbates, has many erections, and handles his genitals frequently. Such children are fretful, peevish, thin, nervous, excitable and sleep badly. Boys who masturbate usually have a long prepuce; they have a sallow look, and sheepish, hang-dog expression. They are melancholy, sit by themselves, become absent minded, and the innocent frankness of youth is absent. The young man is over-shy, unambitious, he shrinks from a steady gaze, blushes readily, and seems-conscious of having done something unmanly and little. Men who masturbate often show no sign of the habit, and it is rare for them to practice it to excess. In the vast majority of instances, masturbation does little harm to the individual except in regard to his morals. The practice is a base one (Keyes).

Treatment.—If a nurse handles an infant she should be discharged. If the infant has already acquired the habit his hands must be tied when he sleeps, and at other times watched. Boys should always be made to sleep alone. The best treatment is to elevate the boy out of his bad habit, to shame him, to make a man out of him, to sympathize with him, and to treat him morally. When a man comes complaining of the results of masturbation, it will be found that he is a hypochondriac, and his malady ungratified sexual desire. He should be encouraged and advised to marry. Medicines are of little or no value. Cold-sponge baths, out-door sports, physical fatigue, sleeping in a cold room on a hard bed, with light covering, eating lightly at night, and not retiring until very sleepy are all useful in breaking up the habit (Keyes).

MILK-LEG. (See Phlegmasia Alba Dolens.)

MISCARRIAGE. (See Abortion.)

MENIERE'S DISEASE. (See Vertigo.)

MOLES.

Are very common, few people being without one or more upon the surface of the body, while many have them in numbers. Moles are sometimes congenital, constituting one of the varieties of "mother's marks," and sometimes acquired. They occur in the shape of circumscribed brown patches, and on the face in the gentler sex are often regarded as beauty spots. They are rarely of any great importance beyond the disfigurement they produce. Occasionally they become the seat of a cancerous disease; the melanotic sarcoma has frequently its origin in such congenital spots. Many of the most virulent forms of multiple cancer the surgeon sees have their origin in moles (Bryant).

Treatment. The surgeon should excise any mole that has a tendency to grow or become indurated in middle life. When they are situated on the face, it is generally desirable to let them alone, for if they are small they often adorn it, while if large there is risk of leaving scars. They may be removed by caustics, such as potassa fusa (Bryant and Anderson).

MOTHER'S MARK. (See Nævus).

MILIUM.

A milium is a little round slightly elevated, pearly white spot, about the size of a millet-seed or larger. They are scattered over the surface in variable numbers, but are principally met with on the face, especially near the eyes, and on the eyelids (Anderson).

Cause. Obliteration of the glandular duct and retention of the sebaceous matter is the sole cause.

Treatment.—Consists in puncturing the upper wall of each milium and expressing its contents (Anderson).

MUSCULAR RHEUMATISM. (See Myalgia).**MORBUS COXARIUS.**

Is a disease of the hip-joint.

Causes.—The disease may begin as a synovitis, or it may begin in a rupture, partial or complete of the ligamentum teres, thereby interfering with the nutrition of the head of the femur. It may begin from rupture of some minute blood vessels in the bone just beneath the cartilage. The synovitis is almost always the result of exposure to sudden changes of temperature after violent exercise, such as skating, racing, jumping, playing at foot-ball and other movements that over exercise the joint. In other words morbus coxarius is almost invariably due to a traumatic cause, and not dependent upon some constitutional taint, as scrofula, etc. (Sayre).

Symptoms.—There are three stages: 1. The stage of irritation or of limited motion, before the occurrence of effusion. 2. The stage of apparent lengthening, or of effusion, the capsule of the joint remaining entire. 3. The stage of shortening, or of ruptured capsule. The first thing that attracts the attention of the patient is generally a stiffness about the joint and a limping gait in the morning. In the first stage, there will be slight abduction and slight flexion at the knee and hip. Abduction, adduction, and rotation are also limited. There is atrophy of the thigh or entire limb. There are pain and tenderness. The pain may be referred to the knee, and thus mislead the surgeon. In the second stage, the pain, tenderness, swelling, atrophy, and limited motion of the first stage are increased in severity. The limb is apparently longer, abducted, everted, and flexed in both joints. The foot touches the ground with the sole. The toes are everted as in fracture of the neck. The pelvis is lowered on the diseased side, and projects forward. The natis is low and flat. The pain is most intense. In the third stage, the capsule ruptures and the fluid escapes into the surrounding tissues and the patient is comparatively free from pain. The limb is shorter, adducted, inverted, and flexed in the hip-joint only. The foot touches the ground with the ball only. The toes are inverted. The pelvis

is raised, projected backward, and natis is high and round (Sayre).

Treatment.—Is both local and general. The general treatment will consist of tonics, cod liver oil, stimulants, good food and hygienic surroundings, sunlight and frequent baths. The local treatment consists of absolute rest and freedom from pressure of the parts involved in the disease (extension). If milder measures fail, exsection of the joint is justifiable (Sayre).

NÆVUS.

Is essentially a disease of the capillaries and is made up of a mass of vascular tissue. Nævi are almost always congenital. Some nævi are pigmentary and are then termed "moles" (Bryant).

Situation.—Their commonest situation is in the skin and subcutaneous tissue, and occurs on the head and face much more frequently than elsewhere. If entirely subcutaneous the skin is not discolored, but if the nævus invade the skin there is a discoloration of its surface, or a pedunculated outgrowth like a piece of cock's comb (Anderson).

Varieties.—There are three varieties of nævus—arterial, venous, and capillary according as arterioles, veins, or capillaries predominate in their structure. Arterial and venous nævi are always congenital and subcutaneous. They may be emptied by pressure. The morbid erectile tissue of the venous nævi resemble pretty closely natural erectile tissue of the penis and nipple. A capillary nævus called also "mother's mark," "port wine mark" or "strawberry mark," is the most disfiguring, but the least harmful of the three varieties. It occurs more frequently on the head, face, neck, shoulders and arms than elsewhere; and consists of bright red or purple patches on the surface of the skin. It is sometimes prone to take on unhealthy ulceration. At birth these nævi are often no larger than a pin point, but may grow rapidly (Anderson).

Treatment.—The methods of treatment are various. The artery leading to the nævus may be ligated. The part in which the nævus is situated may be amputated. The nævus may be

injected with various astringent fluids. The actual cautery, various caustics and electrolysis have been tried. Multiple punctures and scarifications of port wine stains have been employed, but it is not very successful (Anderson). For small superficial birthmarks, S. D. Gross applies with a brush locally sixteen grains of corrosive sublimate to half an ounce of colloidion. Bartholow recommends the following:

R Acidi chromici.....3iss.

Aqua destillata.....℥j.—M.

Sig.: Apply with care locally.

Waring paints the spot daily with creosote.

NECROSIS.

Is the death or mortification of bone, and is applied to cases in which part of the shaft of the bone dies.

Causes. Injury or violent inflammation. Necrosis of the lower jaw frequently results from the inhalation of the fumes of phosphorus by persons employed in lucifer match factories. The bone in necrosis dies from obstruction of its circulation (Bryant).

Treatment.—The indication is to remove the sequestrum as soon as it is sufficiently loose. It may require an incision if the dead bone is large (Bryant).

NEPHRITIS. (See Bright's Disease.)

NETTLE RASH. (See Urticaria.)

NEURALGIA.

Is a functional affection of which the chief characteristic is pain. In a purely neuralgic disease there is neither inflammation nor any appreciable lesion in the painful part (Flint).

Causes.—Neuralgia is often an hereditary disease. Any disease causing anemia is a marked predisposing cause. Among exciting causes are damp, cold, lead, mercury, traumatism and chronic blood poisoning. Reflex neuralgia is induced by genito urinary diseases, decayed teeth, dyspepsia, worms, constipation,

etc. Neuralgia may follow or accompany herpes zoster. It is rare before puberty, and most frequent between 20 and 50 years of age. Women are more liable than men (Loomis).

Symptoms.—The pain is at first intermitting, later it is continuous with slight remissions. It may be dull, boring, stabbing, tearing, or darting, and is confined to the course of a nerve. Turning and coughing increase the pain. Increase of pain on pressure is an important point. Tri-facial neuralgia is one of the most common forms. It is usually attended with painful spasm, called *tic douloureux*. *Clavis hystericus* is a variety of tic in which there is a sensation as of a nail being driven into the skull. It is usually met with in anæmic females.

Sciatica is a neuralgic affection of the sensory nerves of the sciatic plexus. It may be caused by pressure of tumors, by caries of vertebrae and by rheumatism as the result of taking cold. Chronic malarial infection may be the cause of sciatica. The pain is more intense at night. Cramps in the muscles of the legs are common. It is a very obstinate affection lasting from six weeks to two months, though it may last for years. Relapses are common (Loomis).

Intercostal neuralgia is an affection of any of the dorsal nerves; the anterior branches of two or three of the nerves upon the left side are those usually affected. It occurs in women as a rule. The pain is intermittent, tearing or stabbing in character, increased by coughing or sneezing.

There are three diagnostic points of tenderness; namely, at the exit of the nerves from the spine, at the side of the chest where they become subcutaneous, and near the sternum or median line at the terminal branches. Cardiac palpitation, dyspnoea, nausea and vomiting are frequent symptoms of intercostal neuralgia. Herpes zoster, intolerable itching, and attacks of angina pectoris often complicate it.

Cervico-occipital neuralgia is usually attended with pain along the course of the occipitalis major, and often resembles that form of muscular rheumatism called *torticollis*, or wry neck.

Coccyodynia is common in women, and is due to neuralgia of the coccygeal plexus (Loomis).

Treatment. Neuralgia has been well said to be the cry of a nerve for better blood. If there be anæmia, a good diet, cod-liver oil, the hypophosphites, quinine, iron and strychnia should be ordered. Neuralgia due to syphilis demands iodide of potassium; to rheumatism, the anti-rheumatics; to gout, colchicum; and to malaria, quinine, but in many non-malarial cases also, especially in tic, quinine is the most effectual remedy.

Local Treatment. Blisters, galvanic current, chloroform, opium, belladonna, veratria liniments, and cold or very hot water may be applied, and usually these remedies afford relief. Aconite is an effective remedy applied locally. Firing, sinapisms and the actual cautery are frequently beneficial. A warm dry climate is favorable. Morphine is the most effective for immediate relief of pain. Neuralgic attacks and headache that are accompanied by flushing of the face are often relieved by ergot. But when the face is very pale, nitrite of amyl is to be preferred. Good results are obtained by the use of antipyrin. In severe chronic neuralgias a portion of a nerve may be excised. In sciatica nerve stretching is effective in some cases (Loomis).

PRESCRIPTIONS FOR NEURALGIA.

R Menthol gr. xxiiss.
Cocaini muriatis.....gr. viiss.
Chloral hydratis.....gr. ivss.
Vaselin..... ʒiiss —M

Ft. ungt.

Sig.: Apply to the painful part and cover with a strip of court plaster. —Galezowski.

R Menthol ʒj.
Linimenti saponis comp ʒij.—M.

Sig.: Use locally. —Witherstone.

R Quinia sulphatis ʒj.
Morphie sulphatis gr. iss.
Strychnie sulphatis..... gr. j.
Extracti aconiti gr. xv.
Acidi arseniosi..... gr. iss.—M.

Ft. massa et in pil. no xxx. div.

Sig.: One pill thrice daily. —S. D. Gross.

- R Chloral hydrastis....
 Pulv. camphoræ.....aa.....ʒiv.—M
 Sig.: Apply with a camel's hair brush.

Geo. Bird.

NIPPLES. (Sore).

Sore nipples are sources of great distress and too often the precursors of mammary abscess.

Causes. They are doubtless often caused by some aphthous condition of the child's mouth, but they frequently result from some unusual sensibility of the skin of the part, and at times from want of care. A simple erythema, associated with great tenderness, is a common trouble at the beginning of lactation to which primiparæ are more subject than multiparæ (Lusk).

Treatment. It is a good plan to anticipate this difficulty by instructing the patient to wash the nipples daily during the last weeks of pregnancy with some astringent or alcoholic solution. In child-bed, in addition to strict cleanliness, great benefit is derived from folding a linen rag around the nipple and keeping it constantly wetted with Goulard's extract, a teaspoonful to a tumbler of water, until the sensitiveness and redness have disappeared. Before applying the child to the breast, care should be taken to wash away the deposited carbonate of lead. Where the nipples are not sufficiently prominent, a breast glass or gutta-percha shield should be worn. The applications of glycerine of tannic acid, Richardson's styptic colloid, tincture of catechu, a solution of nitrate of silver gr. v. to the ounce of water, and an ointment of extract of rhatany gr. viii. mixed with ʒ. ii. of the oil of theobroma, are good applications. Castor oil as an external application or collodion is sometimes useful (Lusk and Bryant). (See also fissures of the nipples).

NYMPHOMANIA.

Is an irresistible sexual desire in females. It is the analogue of satyriasis.

Causes.—As a rule, nymphomania is caused by cerebral lesions. It is also a functional nervous affection (Bartholow).

Treatment.—Twenty grains of the bromide of potassium thrice daily will exert a decided control over excessive sexual

propensity (Ringer). As a rule, nymphomania dependent on cerebral lesions are not diminished or prevented by the bromides (Bartholow). Large doses of camphor (from five to twenty grains) diminish the venereal appetite and the vigor of the erections, and are therefore useful in priapism, satyriasis, nymphomania, chordee, etc. (Bartholow). There is no doubt that excessive use of tobacco lessens the venereal appetite; hence, slightly nauseating doses of the wine of tobacco will effectively check chordee, priapism, satyriasis and nymphomania (Bartholow).

NAUSEA. (See Vomiting.)

NEURITIS.

Is an inflammation of a nerve or nerves. Varieties: 1. Simple neuritis. 2. Toxic neuritis. 3. Diathetic neuritis. 4. Multiple neuritis.

Causes. Simple neuritis is produced by wounds, injuries, and extension of inflammation from adjacent tissues, as an intercostal neuritis is caused by an adjacent pleuritis or tuberculosis of the lung; sciatica, by a pelvic abscess or inflamed hæmorrhoids. Toxic neuritis is caused by lead, copper, arsenic, etc. Diathetic neuritis arises from some systemic condition, such as rheumatism, gout, syphilis, etc., and septic diseases. The cause of multiple neuritis is not known (Bartholow). Alcohol must be recognized as an unquestioned cause, especially of chronic neuritis. Exposure to cold and sexual excess are frequent causes (Loomis).

Symptoms.—There may be chilliness followed by fever, headache, and general muscular soreness. The most prominent symptom is pain in the nerve. The pain is of a very distressing kind; it is a burning, tingling, tearing and intense pain, and is increased by motion or pressure. At first, there is great sensitiveness in the inflamed nerve, and ultimately the parts supplied by the nerve become anæsthetic, then will follow paresis, and finally paralysis, if the nerve is compressed or destroyed. Wasting and degeneration of the muscles are results of neuritis. Various forms of cutaneous eruptions appear, as herpes, eczema

and glossy skin; the nails become clubbed, the hair falls out, and the joints swell and change in structure. The reflexes are diminished (Bartholow).

Differential Diagnosis.—Neuritis may be mistaken for neuralgia. In neuralgia the pain is paroxysmal; there are isolated points of tenderness and absence of paralysis. In neuritis the reverse (Flint).

Prognosis.—Is very uncertain.

Treatment.—In acute cases, leeches may be applied along the course of the nerve, if the patient be vigorous. A full dose of morphine and quinine should be given at once (gr. ss.—gr. xv. for an adult), and two drops every two hours of the tincture of aconite root. In chronic cases the most effective remedies are galvanism and morphine. The electric brush, blisters and the oleate of morphine may be used locally, and iodide of potassium internally (Bartholow).

NIGHTMARE.

Is a sensation in sleep, as of a pressure of a weight on the chest or stomach, and of an impossibility of speech, motion, or respiration, from which one wakes after extreme anxiety, in a troubled state of mind (Dunglison).

Treatment.—The bromide of potassium is the most effective remedy for nightmare (Ringer).

NIGHT-SCREAMING.

Is a symptom which appears to be allied to nightmare (Ringer).

Treatment.—Bromide of potassium is of great service in the treatment of children subject to night-screaming. Children from a few months to several years old may be attacked with this affection. Sometimes the attack occurs only once or twice a week, or it may be repeated several times each night. The screaming may last only for a few seconds or it may endure for several hours. The child is generally horribly frightened. With the screaming and fright, squinting sometimes occurs, which after some time becomes permanent. In these cases bromide of

operation will prevent the straining and remove the squinting.

This straining in children is very generally connected with deranged digestion which should be treated (Ringer).

NEURASTHENIA. See Asthenia).

OBESITY.

Is the excessive accumulation of fat in the organism.

Causes.—The accumulation of fat in the organism is the result of its incomplete oxidation. It may be due to excessive supply or excessive formation of fat. Too abundant ingestion of rich food, especially of fat and carbohydrates, leads to obesity. The tendency to obesity may be hereditary or acquired. In the former it is cured with difficulty; in the latter a suitable regimen will accomplish much. The use of alcohol favors the accumulation of fat by diminishing its normal oxidation (Bartholow and Flint).

Treatment.—In the treatment of obesity, it is necessary to withdraw all fats, starches and sugars from the diet. This is the method of Mr. Banting, now called Bantingism. Obesity, which is frequently diminished by a course of alkalies, is better treated by alkaline waters, for at the springs these patients can be induced, more easily to conform to the plan of exercise and diet necessary in these cases. It is stated that the bromides, especially bromide of ammonium, diminish the deposition and hasten the retrograde metamorphosis of the fat in obesity. Permanganate of potassium has also appeared to be very serviceable as a remedy for an abnormal and excessive deposition of fat. The vegetable acids are sometimes taken by young ladies to keep down the formation of fat; but it accomplishes this object by impairing digestion (Bartholow).

Dr. Neligan states that he has often removed an uncomfortable excess of fat by the use of liquor potassæ, without in any way injuring the patient's general health.

PRESCRIPTIONS FOR OBESITY.

- ℞ Potassii permanganatis.....gr. vj.—xxiv.
 Aquæ destillatæ℥ij.—M.
 Sig.: A teaspoonful three times a day. —Bartholow.
- ℞ Liquoris potassæ.....℥ij.
 Sig.: A half teaspoonful in milk thrice daily. —Waring.

ŒDEMA. (See Dropsy.)

ONYCHIA MALIGNA.

This is a disease of the nail matrix.

Causes.—It is most commonly found in unhealthy children, and as a rule is started by some local injury such as a squeeze (Bryant).

Symptoms.—It commences as a swelling of the end of the toe or finger, with redness, heat and pain. These symptoms are soon followed by exudation from beneath the nail of a serous and often fetid fluid; the nail itself loosens, sometimes falls off, or either flattens out or curls up at its edges. In rare instances the disease involves the last phalangeal joint or bone. The fingers and thumbs of both hands may be involved, and the disease may exist for years (Bryant).

Treatment.—In mild cases, tonics internally and water dressing externally suffice to bring about a cure. In severe cases, it may be necessary to take away nail and soft parts and even the extreme phalanx. The application of the powdered nitrate of lead to the ulcer has been strongly recommended. The disease at times may have a syphilitic origin when it will be wise to adopt specific treatment (Bryant). Ringer recommends mercury ointment applied for ten minutes every hour, and poultices at other times. He also advises nitrate of lead to be dusted on the diseased tissues night and morning. Bartholow applies a solution of chloral to the part or iodoform in powder or ointment.

OPHTHALMIA.

Is an inflammation of the eye. It is a severe form of conjunctivitis called purulent.

Varieties. Ophthalmia neonatorum which occurs in infants at or soon after birth, and gonorrhœal ophthalmia which occurs in adults (Noyes).

Causes. In both classes the disease is essentially the same, and originates from a contagion in the great majority of cases. This contagion is the gonococcus.

Ophthalmia Neonatorum.—At birth the eye-lids are always agglutinated by the parturient secretions. It is common too for the eye-lids to remain red and sticky for a day or two. The great proportion of these simple cases will not require serious attention, and will clear up if the eyes be washed with warm milk and water, or with a solution of boracic acid several times a day. But it is the purulent form due to gonorrhœa which demands active treatment. In this form there is swelling of the lids with thick yellow secretion issuing from the eyes. The cornea may ulcerate (Noyes).

Prophylaxis.—The importance of preventing this disease will be appreciated when it is learned that nearly one third of the inmates of blind asylums were made blind by this disease. Where there is a suspicion of gonorrhœa, the vagina may be washed out for some time before parturition and while labor is going on with a three per cent solution of carbolic acid. As soon as the child is born, Crede drops a single drop of a two per cent. solution (gr. x. to ʒj.) of nitrate of silver between the lids of each eye. Dr. Noyes thinks a one per cent solution will suffice.

Treatment. At first when the secretion is watery, cold lotions and three per cent. solution of boracic acid may be used. As soon as the secretion grows a little thicker, and the swelling of the lids grows less, a solution of nitrate of silver (gr. v gr. x to ʒj.) may be applied to the everted lids, carefully avoiding the cornea, once in 24 hours (Noyes). Gonorrhœal ophthalmia in adults is essentially the same disease as ophthalmia neonatorum. The gonorrhœal poison is conveyed to the eyes through the fingers,

handkerchiefs, towels, etc., from acute or chronic gonorrhœa (Noyes).

Symptoms.—Are hyperæmia, swelling of the lids which speedily closes them, and at first a thin discharge. The secretion in a little time becomes more and more purulent. Ulceration of the cornea may occur.

Treatment.—The patient should go to bed. Four to six leeches may be put upon the temple in robust subjects. Continuous cold applications must be kept to the eye. Absolute cleanliness is imperative. Boracic acid four per cent. solution must be used to cleanse the eyes. When the secretion becomes creamy and distinctly purulent, a solution of nitrate of silver (gr. x. to ʒj.) may be applied to the everted lids, care being taken to avoid the cornea. This is applied once in twenty-four hours. Should the cornea become invaded, a solution of atropine sulphate (gr. ij. to ʒj.) should be instilled every three to six hours (Noyes). Crede irrigates the eye frequently with a solution of corrosive sublimate (gr. j. to ʒxij.).

OPIUM HABIT.

In chronic opium poisoning, the opium is not always taken by the mouth; it may be taken in the form of morphine hypodermically. Some persons take thirty grains of morphine per day. Opium eaters are entirely unreliable. They are chronic liars, owing to their incapacity to tell the truth.

Not all persons will contract this habit, but in a minority of people opium is unusually pleasant, and these are the persons who are most liable to become opium eaters. Opium affects some people unpleasantly. Many smoke opium and say they can get effects which they cannot get in any other way. The opium habit is, as a rule, contracted unconsciously. In order to get the effect which we get at first, it is necessary to increase the dose. Neuralgic patients often become opium eaters. In some it stimulates the mental faculties. De Quincey took 320 grains daily and wrote beautifully. Opium is a much more dangerous drug than alcohol. The opium habit is much harder to break up than the alcohol. Any one who takes two grains of morphine or

more in twenty-four hours might be said to have contracted the opium habit. In chronic opium poisoning the pupils are usually contracted. Later on it takes a large amount to cause this contraction of the pupil. A chronic opium eater is apt to complain of pain which varies in location from time to time.

This is done with a view to justify the taking of opium. Such patients are great seekers of sympathy; are subject to vomiting. At first opium is apt to cause constipation, but later on, if continued, it usually causes diarrhœa. An obstinate form of diarrhœa should always create suspicion (A. A. Smith).

Diagnosis.—Always examine the urine or perspiration for opium. A very small quantity in these fluids may be detected. This should be done when the patient will not own up (Smith).

Results.—The chronic opium habit will destroy a man mentally, physically and morally. Renal disease is very apt to develop sooner or later because of changes in the nervous system. Myocarditis of a sub-acute character is apt to develop. Pneumonia in such cases is apt to be fatal. Opium causes a man to become old while yet young. It hastens degenerative changes. There is œdema in the lower extremities usually in chronic opium eaters. It destroys the will power (A. A. Smith).

Treatment.—Two methods of curing the habit may be adopted: 1. Cut it off short. Prof. Flint advocated this method most of his life, but altered his opinion later. 2. Gradually withdraw the drug. This is the best method. When we think we are getting the patient down to two grains a day (from thirty grains per day), he is probably taking a great deal more. If such a patient who is thought to be taking a small amount of opium feels well and does not complain of any inconvenience, we may know that he is deceiving us. He will even bribe his nurse. It requires the most careful watching in such cases, else he will deceive us. The more rigid and positive we may be the better for the patient. If the patient has been taking 30 grains per day, Prof. Smith always tries to get him down to one grain per day in 30 days. Should keep the patient under treatment for at least six months. Build up and improve the digestion as the dose of opium is reduced. The horrors which opium-eaters suffer when the drug is withheld are well known; so great,

indeed, is the suffering that few have sufficient resolution to relinquish it. Ringer thinks that moderate indulgence of the habit is not perhaps more prejudicial to health than tobacco-smoking.

PRESCRIPTIONS FOR OPIUM HABIT.

R Ext. cannabis indicæ.....℥ij.—(Squibb).

Sig.: A teaspoonful every hour or two, as required. (For restlessness). —Mattison.

R Zinci oxidi.....℥ss.

Syrupi simplicis.....q. s.

Ft. massa et in pil no. xxx. div.

Sig.: One pill once daily increasing to tolerance. (For vomiting and diarrhœa). —DaCosta.

R Spartein sulphatis.....gr. j.

Aquæ destillatæ.....℥j.—M.

Sig.: Ten minims hypodermically, for the collapse produced by withdrawing the drug. —Ball.

R Tincturæ nucis vomicæ.....gtt. xij.

Acidi phosphorici dil.....gtt. xx.

Syr. pruni Virg.....℥ss.—M.

Sig.: To be taken twice daily.

ORCHITIS.

Is an inflammation of the testicles.

Causes.—True orchitis is very uncommon. As complicating mumps, no rational theory has been advanced to account for it. Orchitis due to mumps is most often observed at about the age of puberty. It occurs in about five per cent. of the cases. It comes on near the end of the first week of the mumps and is usually confined to a single testicle. The affection runs a quick course of about a week or ten days, and usually clears up. Orchitis after severe injury to the testis is not uncommon. It tends to terminate in abscess or gangrene. Orchitis as a result of cold is possible. Excessive sexual excitement has been adduced as a cause. It may complicate variola, typhoid fever and gout. Orchitis may come on secondarily during epididymitis (Keyes).

Symptoms.—In true orchitis the increase in the size of the testis generally advances rather slowly. The pain is often excruciating, and always out of proportion to the amount of swelling. It has been compared to renal or hepatic colic. No position gives rest and any handling of the organ is liable to induce syncope. If the pain suddenly ceases, it may mean mortification of the organ. The shape of the testicle is rarely altered in orchitis. The organ feels indurated.

Terminations.—It may terminate in gangrene, in complete resolution, or in atrophy. The general symptoms are often severe; chills, high fever, anorexia, nausea, vomiting, hiccough, constipation, sleeplessness, anxiety and nervousness (Keyes).

Prognosis.—Is always grave.

Treatment. The patient should be put to bed, with the testicle supported in a sling. If the case is seen early, ten to fifteen leeches may be applied in the neighborhood of the abdominal ring. The testicle may be enveloped in strong belladonna ointment, or a paste composed of powdered opium and glycerine, or if the pain be not too excruciating, in a light tobacco poultice. Saline cathartics should be given. The diet should be low, non-stimulating, and easily digested. On the slightest suspicion of gangrene, it is wise to resort to subcutaneous section of the tunica albuginea to take off tension. If abscess form it should be opened (Keyes).

PRESCRIPTIONS FOR ORCHITIS.

- R Tincturæ pulsatillæ ʒss.
Sig : One to three drops every hour or two in water. —Brown.
- R Antimonii et potassii tart gr. j.
Aque ʒviiij.—M
Sig.: One or two teaspoonfuls every hour or two —Ringer.
- R Morphia sulphatis gr xvj.
Hydrargyri oleatis (10 per cent.) .ʒij.—M.
Sig : Apply twice daily. (To remove induration) —Marshall.
- R Tincturæ iodi ʒss.
Sig.. Apply to swollen testicle after acute symptoms are over.
—Bartholow.

R Sodii salicylatis..... $\bar{3}$ ss.
 Syrupi simplicis..... $\bar{3}$ ij.
 Aquæ menthæ pip.....ad..... $\bar{3}$ vj.—M.

Sig.: A tablespoonful every hour till the pain is relieved. then
 every four to six hours. —Pigornet.

OTITIS.

Is an inflammation of the ear. If the inflammation is confined to the external ear, it is called otitis externa; if confined to the middle ear, it is called otitis media; if to the internal ear, otitis interna.

Otitis externa is an inflammatory affection of the external auditory meatus involving the cutaneous tissues of that canal, the periosteum of the osseous part of the canal, and the membrana tympani (Purves).

Causes.—Irritation or injuries to the ear, the prolonged use of injections, the pressure of foreign bodies, the passage of cold currents of air or water, the non-drying of the ear after washing, the presence of fungi, and anything which will cause congestion or irritation, are causes.

Symptoms.—The patient complains of a continual itching sensation with a feeling of heat and dryness in the canal. There is a feeling of fullness in the ear. The discharge is at first watery, but finally becomes purulent.

Treatment.—Discover and treat the cause. Frequent injections of warm water are useful. If there are foreign bodies present remove them. Prevent the formation of pus.

Otitis media is an inflammation of the middle ear. The symptoms are acute pain and fever. It is nearly always followed by perforation of the membrane. The treatment is to evacuate the pus as soon as formed. Leeches, opiates, purgatives and warm water injections into the meatus are usually found successful. When the discharge occurs, the ear should be syringed with lukewarm water to which is added an antiseptic (Purves).

OTALGIA.

Is a neuralgia of the ear.

Causes.—When a patient complains of pain in the ear, and no inflammation is found either in the external or the middle ear, the teeth should be suspected as being at the root of the trouble. In the majority of cases of otalgia, sufficient dental disease is found to justify the belief that this is the primary cause, and the otalgia simply a reflex condition. The cause of otalgia may be malarial, rheumatic or syphilitic (Buck).

Treatment.—If the cause of otalgia be a carious tooth, it should be extracted or properly filled. In any case discover the cause and treat it.

PRESCRIPTIONS FOR OTITIS AND OTALGIA.

- R** Morphiæ muriatis.....gr. v.
 Atropiæ sulphatis.....gr. j.
 Olei olivæ.....ʒj.
 Glycerinæʒiss.—M.
Sig.: Five drops in the ear every hour till relieved (Otalgia).
- R** Acidi carbolicī.....ʒj.
 Glycerinæʒix.—M.
Sig.: A few drops in the ear three times daily. =Hartmann.

OXALURIA.

When oxalate of calcium occurs constantly in the urine, it produces the so-called oxaluria or oxalic acid diathesis, and is apt to lead to the formation of the mulberry calculi and in time exert its poisonous effects on the brain and spinal cord (Loomis). Sometimes the crystals appear accidentally in the urine from the free use of rhubarb or tomatoes. Disturbed or exhausted nerve power and imperfect digestion, nervous prostration produced by excessive venery and over stimulated or ungratified sexual desires are associated often with oxaluria (Keyes).

Treatment.—If enough of any alkali be given to render the urine abundant and limpid, the oxalate of lime will occasionally disappear for a time. Baths are beneficial. The true curative treatment is purely hygienic and based upon a correct apprecia-

tion of the causes. The mineral acids and strychnine seem sometimes to do good as tonics; an outdoor life sometimes cures (Keyes).

PRESCRIPTIONS FOR OXALURIA.

- R Acidi nitro-muriatici dil.....ʒij.-iij.
Tinct. gentianæ comp.....
Tinct. cinchonæ comp.—aa.....ʒj.
Elixir curacoa.....ad.....ʒiij.—M.
Sig.: A dessertspoonful in a wineglassful of water thrice daily.
—Ringer.
- R Glyceriti pepsinæʒiss.
Acidi lactici.....ad.....ʒij.—M.
Sig.: A teaspoonful after meals. —Bartholow

OZÆNA. (See also Catarrh, Nasal.)

In chronic nasal catarrh, if the mucous membrane is destroyed by ulcerations, and caries of the bones has occurred, the case is then called ozæna.

The morbid process extends through the nasal passages and into neighboring cavities. The discharge consists of a greenish, offensive pus, or of scales taking the form of casts of the bones which are also offensive from decomposition (Bartholow).

The disease is very obstinate and hard to cure. The following prescriptions may be tried:

- R Sodii biboratis.....
Ammonii chloridi—aa.....gr. xx.
Potassii permanganatisgr. x.—M.
Sig.: To be dissolved in one pint of tepid water and used thrice daily with a syringe or douche. —Sajous.
- R Extracti hydrastis fluidi.....ʒij.
Sig.: Five minims in water three times daily. Also add one teaspoonful to half a pint of tepid water and use as a lotion for syringing the nares. —Bartholow.

ONANISM. (See Masturbation.)**OXYURIS VERMICULARIS.**

Called also thread worm from its resemblance to pieces of ordinary white sewing thread, also seat worm from its habitat, is frequent in childhood and not infrequent in the adult (Smith).

Size.—The length of the male oxyuris is about one-fourth of an inch; that of the female about one-half inch. They are cylindrical and taper to both extremities.

Habitat.—The habitat of the oxyuris is the large intestine of man, especially the rectum, and they insinuate themselves into the folds of the mucous membrane and skin at the margin of the anus. They migrate into the vagina and upward into the large intestine and lower part of the ileum in great numbers. The eggs are oval, each female containing about 10,000. All their stages of development take place within the intestinal canal. The ova enter by means of the food or directly through personal contamination (Bartholow).

Symptoms.—They excite by their presence in the rectum an intolerable itching, sometimes severe pain, tenesmus usually, and these sensations are propagated to the genito-urinary organs. The itching is most troublesome at night, when warm in bed. The stools are usually relaxed, fetid and coated with mucous. The skin about the anus is reddened. Various reflex phenomena are induced by the irritation of the worm such as epilepsy, chorea, catalepsy, etc. (Bartholow).

Treatment.—Santonine aided by calomel should be first given. As soon as this has acted, the bowel should be irrigated by a weak decoction of quassia or of aloes. If the vagina is infested, it must be irrigated with the same solution. The next step consists in carefully sponging out all the folds and crevices of the anus and perineum and the external genitals also with a one per cent. solution of carbolic acid. Vix has found water and castile soap to be the most effectual enema. A variety of substances administered by injection will speedily destroy thread-worms. Thus a teaspoonful of common salt in solution, or a drachm of sesqui-chloride of iron in a pint of water are very ef-

ficacious; so is lime water, solution of alum and in fact any substance which coagulates the albumen of the worms (Bartholow and Ringer).

PRESCRIPTIONS FOR OXYURIS VERMICULARIS.

℞ Santonini.....gr. xij.
Olei theobromæ.....ʒj.—M.
Ft. suppositoriæ no. iv.

Sig.: One at bed time introduced into the rectum.—Hartshorne.

℞ Tinct. rhei..... gtt. iiij.
Tinct. zingiberis.....gtt. j.
Magnesii carbonatis.....ʒv.
Aquæ.....ʒiiij.—M.

Sig.: This dose should be taken three or four times daily according to the effect on the bowels. —Martin.

℞ Sodii chloridi.....ʒx.
Aquæʒvi.—M.
Ft. sol.

Sig.: To be injected by the rectum. —Eillard.

℞ Tinct. ferri chloridiʒss.
Aquæ Oj.—M.

Sig.: One fourth to one third as a rectal enema. —Ringer.

OPACITIES IN EYE.

The opacity is a cloudiness in the transparent media of the eye.

Causes.—The causes are various. They result from ulcerations, burns, injuries, inflammation from excision of a pterygium, etc.

Discovery.—To discover a very faint opacity, one must use oblique illumination in a dark room or examine with the ophthalmoscope and feeble light. A plain mirror having behind it a convex glass of three inches focus will do the best service. Distant vision is always more disturbed by faint opacities than near vision. A well defined opacity partially covering the pupil is much less damaging to vision even if dense, than a faint haze with filmy edges (Noyes).

Treatment.—The more recent the opacities the more likely are they to improve. So long as blood vessels remain in their vicinity the improvement will continue. The restorative action will go on for months. The treatment consists in stimulating applications. The most serviceable are: very finely powdered calomel dusted daily into the eye and which is especially suited to children; ointment of yellow oxide of mercury (gr. ij-x to the ʒ. j.) to be used every night, or once in two or three nights, according to susceptibility; astringent drops in various strengths, as phosphate of zinc, alum, sulphate of cadmium, tannin in glycerine (ss. to ʒ. j.) tincture of opium diluted 1 to 10, solution of chloride of potassium, 1 to 3; common salt 1 to 5 or 20; hot fomentations: powdered sugar, molasses, etc. The object is to irritate and cause hyperæmia, not to last longer than a patient can tolerate.

Opacity will grow fainter for at least a year. When no further absorption is possible and a dense opacity exists, two proceedings remain, and they are often combined, namely, iridectomy and tattooing. An artificial pupil should, as a rule, never be made during the recent stage of an opacity unless very dense and extensive. When the pupil is covered or the iris is proptosed and a marginal part of the cornea is more or less clear, an iridectomy will be in place. The spot at which a pupil is to be placed is frequently not a matter of discretion because there may be only one clear region. If a choice is possible the lower segment of the cornea is to be preferred to the upper. Very dense opacities which are a blemish both to sight and to personal appearance may be tattooed with India ink. The fine and expensive quality of ink is to be used. A bit of the ink paste equal to the size of the spot to be colored is placed upon the cocanized cornea. Numerous and rather forcible pricks with a bunch of needles driven obliquely in various directions will force the ink under the epithelium, and if it be thick enough one sitting may be sufficient (Noyes).

OVER-WORK.

Treatment.—When there is sleeplessness caused by worry or over-work, or that occurring at the menopause, or from menstrual disturbances, the bromide of potassium in twenty grain

doses at night is invaluable. A drop of laudanum with two of tincture of nux vomica, three or four times a day, will relieve the distressing symptoms of hysterical women or nervous over-worked anxious men. Persons in broken health from over-work are benefited by $\frac{1}{30}$ to $\frac{1}{50}$ of a grain of phosphorus, thrice daily for several months. A sitz-bath for ten minutes at 70° to 80° on return from business tired and irritable, and one-half hour before dinner is highly beneficial (Ringer).

ŒSOPHAGEAL OBSTRUCTION.

As its name implies, is an obstruction of the œsophagus in any part of the tube from whatever cause.

Causes.—When a patient complains of difficulty in swallowing, or rather the difficulty in passing food onward down the œsophagus after the act of swallowing has been performed, and of its subsequent return into the mouth, the surgeon in looking for the cause should first think of thoracic aneurism, then of cancer of some portion of the tube, and lastly of syphilitic or simple ulceration. He should also always inquire into the history of the case, as to whether the patient sustained any local injury from the swallowing of a foreign body, of boiling water, or of corrosive fluid. If injury and aneurism can be excluded, there is little doubt that the true cause is cancer (Bryant).

Symptoms.—So long as solid food passes, the patient is hardly aware of any obstruction existing, and seldom consults a physician. The first symptom that attracts notice is the regurgitation of food. As the disease advances some sign of ulceration may appear, such as the discharge of pus or blood, which usually comes up with the regurgitated food, and when this occurs there is no better indication of the presence of ulcerative action. If the patient be middle-aged, the probabilities of the disease being cancer are very strong; and should there be any local thickening behind the larynx or glandular enlargement, the probabilities are enhanced. The following case which occurred in a patient of the writer illustrates the above very forcibly. The patient, aged 53, was dying from starvation caused by inability to swallow on account of obstruction of the œsophagus. By question-

ing it was learned that the trouble had commenced nine months before. There was no history of injury. Upon examination there was found a thickening behind the larynx and enlargement of contiguous lymphatic glands. All liquids or solids swallowed by the patient were immediately returned into the mouth together with pus and stringy mucus. The patient died seven days after the examination. The autopsy showed almost a complete closure of the oesophageal tube in its upper third due to cancer.

Treatment.—The treatment by dilatation must be looked upon as a dangerous measure, except when the stricture is of the cicatricial form, the passage of an instrument in cancerous or any ulcerative disease being likely to hasten the fatal termination by causing perforation of the ulcer into the air passages or pleura. In these cases fluid nourishment should be taken. When swallowing becomes impossible, a fine flexible tube may be passed through the stricture. The powers of the patient may be kept up by nutritious enemata. When all these means fail, the question of opening the stomach by an operation must be entertained. Billroth recently has cut down upon the oesophagus and excised the cancerous growth but without success; the operation is commended to our consideration only by the eminence of the surgeon who performed it (Bryant).

PALPITATION OF THE HEART.

Is a functional disturbance of the organ characterized by increased rapidity of movement, with more or less irregularity of rhythm (Bartholow).

Causes.—The heart has a power of independent motion, motor apparatus, but it also receives force from the great centres. To maintain the movement at a uniform rate, there is a regulator apparatus, designed to prevent overaction or to inhibit. Besides this mechanism for evolving force and applying it so as to produce uniform results, the action is affected by the state of the vessels, by the density of the blood, by the movements of the respiratory organs, and by the functions of animal life. Hence, to maintain the action of the heart, there are: 1. A motor apparatus—motor ganglia—situated in the substance of the

heart. 2. Excitors of activity, branches from the cervical sympathetic, and also from the spinal cord, irritation of which increases the movements of the heart. To regulate the movements of the heart, there are: 1. The pneumogastric, irritation of which may arrest the heart in diastole. 2. The depressor nerve of Ludwig, which acts by dilating the blood vessels. The fibres of the sympathetic, dilator and constrictor, affect the work of the heart by increasing or lessening the tension at the periphery. The direct cause of palpitation is over-stimulation of the cardiac muscle or the excitability from functional derangement of the pneumogastric, or cardiac ganglia, which is either induced by direct or reflex causes. Muscular exercise, breathing rarefied air, as in the ascent of mountains, and blows on the epigastrium may cause it. Mechanical interference with the movements of the organ, as contracted chest, thoracic effusions, tumors of the mediastinum, flatulence, distension of the stomach and atheroma of the arterial system generally may induce it. Moral and emotional causes, as grief, hope, anxiety, fear, excessive mental effort, etc., increase the action of the heart. Various reflex troubles have the same effect, such as uterine disease, gastralgia, worms, etc. Palpitation is a very frequent symptom in states of debility or anæmia. The cardiac ganglia are rendered irritable by the excessive use of tea, coffee, tobacco and spirits. Sexual excesses, enervating habits, diabetes, sudden shock or fright, chorea or derangements of the digestive organs may cause it. Gout, chronic disease of the liver and Grave's disease may be accompanied by palpitation (Bartholow and Loomis). Palpitation may accompany organic cardiac disease (DaCosta).

Symptoms.—The normal cardiac impulse is so slight that the motion is not perceptible, unless the hand be applied to the præcordial space. Whenever a person becomes sensible of the beating of his own heart, he may be said to have cardiac palpitation. The cardiac impulse is unnaturally strong, and the action of the heart unnaturally rapid, which may be irregular or intermitting. Sometimes there is a loss of three or four beats which causes a sense of oppression, or even of impending death. Palpitation may be accompanied by a choking, paroxysmal, fluttering sensation. The heart-sounds may be audible to the

patient when he lies on his left side. There may be præcordial pain or anxiety. The carotids throb. The attack may last from a few minutes to some hours, or a day. There is dyspnœa. The heart seems almost to turn over, to rise up into the throat. The patient cannot lie down. There may be vertigo, faintness and flashes of light. The face may be pale or flushed. Speech is difficult. At the end of the paroxysm a quantity of pale, limpid urine is usually passed. Dr. Cotton reported a case in which the pulsations were 240 per minute, and ceased on the evacuation of of a tape-worm (Bartholow and Loomis).

Differential Diagnosis.—Cardiac palpitation independent of organic disease of the heart may be mistaken for cardiac palpitation depending upon organic cardiac disease. The former comes on suddenly and is not constant; the latter comes on slowly and is persistent. In functional palpitation, all the physical signs of organic cardiac disease are absent. Palpitation of organic heart disease is increased by exercise (Loomis).

Prognosis.—Is always good in functional cardiac palpitation, but may cause the patient great uneasiness (Loomis).

Treatment.—Discover and remove the cause. Tea, coffee, tobacco and alcoholic stimulants must be given up. Errors of digestion, reflex disturbances and curable diseases must be corrected at once or cured. Anæmic subjects should take iron in large doses for a long period. The body should be sponged night and morning in cold water. In the absence of any explanation of the paroxysms, the presence of a tape worm may be suspected. For the immediate relief of the attack, there is no remedy so efficient as the hypodermic injection of morphia. If the surface is pale and the extreme vessels contracted, inhalation of nitrite of amyl (two to three drops) affords prompt relief. The application of the ice-bag to the præcordial region is an effective means of quieting the heart. The galvanic current, from ten to thirty elements, passed through the pneumogastric and cervical ganglia of the sympathetic, often gives great relief. Chloral, the bromides, camphor, asafœtida, and valerian are sometimes useful. Digitalis should never be given in purely nervous cardiac palpitation. The physician should assure the

patient that there is no danger attending the paroxysm of functional cardiac palpitation (Bartholow and Loomis).

PARALYSIS.

Is the loss of muscular contractility, and, as a consequence, of the power of motion. The term is also applied to the loss of sensibility. The former is *motor* and the latter *sensory* paralysis.

Paralysis is not a disease, but a symptom. A slight incomplete paralysis is called paresis.

Origin and Extent.—Paralysis is nearly always of nervous origin. It may be general or partial. It may affect the majority of the muscles of the frame, or be limited to one muscle. It may be strictly confined to one side (hemiplegia), or exist solely in the lower half of the body (paraplegia). It may be complete or incomplete. It may come on rapidly or slowly (DaCosta and Flint).

Causes.—Paralysis may be neuropathic or myopathic. A myopathic paralysis depends on a primary morbid condition of the muscles paralyzed. Neuropathic paralysis depends on either a morbid condition of the nerve centres or nerves. The neuropathic is divided into central and peripheral paralysis. Central paralysis depends on morbid conditions seated in either the brain or spinal cord, and are divided into cerebral and spinal. Peripheral paralysis depends on morbid conditions affecting the nerves at any point between their terminations and their central connections with either the brain or spinal cord.

The causes may be thus summed up :

1. Paralysis due to a lesion or any morbid condition of the nervous centres as hemorrhage into or softening of the central nervous textures, and certain diseases of the brain and spinal cord. To this class must be added the functional palsies which depend upon a functional derangement of the great centres of innervation, such as hysterical paralysis, and that occurring after overwork or excesses, and from nervous exhaustion.

2. Paralysis due to a lesion in the course of a nerve, such as a wound or compression. Palsy from this cause is local, and

is apt to show morbid nutritive changes in the affected part, such as glossy fingers and swollen joints, and to be associated with pain.

3. Paralysis due to an affection of the nerves at their extremities, such as exposure to cold. Peripheral palsies lead quickly to atrophy of the muscles.

4. Paralysis due to reflex action, such as irritation of the dental nerves in teething children, disorders of the intestines both in adults and in children, or disease of the bladder, urethra, prepuce, uterus, lungs, plura, or irritation of the nerves of the skin. In these cases, the paralysis is produced through the reflex centres, which reflect the irritation communicated to them to parts healthy in themselves. How else can a wound of a nerve on one side of the body lead to palsy on the other? Reflex paralysis is rarely of long duration.

5. Paralysis due to serious interference with the circulation as after the ligation of a large artery.

6. Paralysis due to a morbid state of the muscles, as certain forms of rheumatic palsy and of muscular atrophy.

7. Paralysis due to the presence of poison in the system, such as lead, arsenic, mercury, alcohol, sulphuret of carbon, malarial poison, and the poisons of rheumatism, gout and acute diseases (DaCosta).

Condition of Paralyzed Parts. The nutrition and secretion are disturbed and the circulation is sluggish. They are frequently swollen and œdematous, the pulse is weaker than in the sound members, and the sensation is impaired, the nails grow slowly, so do the hairs, the perspiration is defective, the skin feels cold and is prone to break. The muscles may be relaxed or rigid, and diminished in size.

The mode in which palsies are investigated at the bed side. We must notice the *size, appearance* and *feel* of the stricken part. Then we test the sensibility to contact, to tickling, to pinching, to cold and to heat; we measure the tactile sense by the æsthesiometer and note the reflex movements. We next contrast the muscles and their motion with the healthy side. We test the power by the grasp and by other means. But the most valuable

agent to judge of the state of the muscle is electricity. We should compare the contractions of the sound side with those of the diseased (DaCosta).

Differential Diagnosis.—There are certain points of difference in the effects of cerebral, spinal and peripheral paralysis. In cerebral paralysis the reflex excitability of the affected muscles is retained and may be increased. The electro-muscular contractility is intact in cerebral palsies. The muscles do not speedily become atrophied. The cutaneous sensibility is often undiminished. In *spinal paralysis*, the paralyzed muscles do not retain their reflex and electrical excitability; but there are exceptions to this. Sensibility may be retained, diminished or lost. There may or may not be trophic disturbances. In *peripheral paralysis* the reflexes are generally diminished. The affected muscles undergo rapid trophic changes, and the nerves and muscles take on the action of degeneration. Peripheral paralysis may be the result of syphilis or diphtheria. In all cases of paralysis we must get the history of the case (DaCosta and Flint).

"Paralysis from Commotion."—Cases in which paralysis occurs after a variable period dating from railway accidents, have been described especially by Erichsen. These cases have been considered as important in a medico-legal point of view.

GENERAL PARALYSIS.

Exclusive of general cerebral paralysis, general paresis, or paralysis of the insane, *general palsy* dependent upon morbid conditions of the brain is rare.

Causes. It may be a result of two attacks of hemiplegia, the first attack affecting one, and the second the other side. Hemorrhage into the central portions of the pons or bulb may give rise to double hemiplegia, or general palsy. In the great majority of cases general paralysis is spinal. The seat in the spinal cord is to be inferred whenever cranial nerves are not involved and there are no symptoms denoting cerebral disease. General spinal paralysis is incident to inflammatory and structural affections of the spinal cord and its meninges. In rare instances it follows diphtheria, and is sometimes connected with

hysteria. It may be caused by exhaustion and exposure to cold.

Spinal hemiplegia, with motor paralysis on one side and anæsthesia on the opposite side, probably always implies a lesion limited to the half of the cervical portion of the cord on the side of the motor paralysis.

Paralysis may affect the upper limb of one side and the lower limb of the other side; and may be produced by lesions situated at the crossing of the pyramids in the bulb.

In hemiplegia or one sided palsy, the face may be paralyzed on the same side as the rest of the body, and the reason of this lies in the fact that the facial nerves decussate. Should, then, the lesion be situated in the brain above this crossing, both face and body are paralyzed on the opposite side to the diseased spot. Should, however, the lesion involve the facial nerve-fibres at a point below or after the decussation, there will be paralysis of the face on one side; and of the limbs on the other. This is *cross paralysis*, and is always indicative of a lesion of the pons Varolii.

Paralysis may come on suddenly or gradually. *A sudden paralysis* almost always has its origin in an apoplectic effusion, cerebral embolism, and softening. A gradual development of palsy indicates some chronic cerebral disorder, such as softening, a tumor, or any affection compressing the nervous substance.

Monoplegia is a paralysis of a muscle or a set of muscles, of one limb, or of one side of the face.

PARAPLEGIA.

Is paralysis of the lower half of the body.

Causes.—Its almost invariable cause is a lesion of the spinal cord. Exhaustion, exposure to cold, sexual excesses, hysteria, diphtheria, syphilis, poisons, small clot in the pons, injury to cord, spina-bifida, tumors, shock and concussion of the spine are the principal causes (DaCosta, Flint and Loomis).

Treatment.—Of remedies having direct reference to the paralysis, electricity holds the first rank. When the paralysis is due to diseases involving inflammation, we must not apply the currents until the proper time. Frictions, massage, kneading and

stimulating liniments are useful. Of drugs, strychnia or nuxvomica and phosphorus are to be recommended. The cause in each should be removed if possible. Strychnia is contraindicated in the cases of hemiplegia when the injury to the brain or cord has been recent. It generally does no good, but harm, when the paralyzed muscles are rigid. In local paralysis, the solution of strychnia should be thrown into the substance of the paralyzed muscles (Bartholow and Flint).

PEDICULI. (See Lice).

PEMPHIGUS.

Is a skin disease characterized by an eruption of bullæ. Bullæ differ from vesicles only in their size. They resemble large blisters. *Pemphigus* is the typical bullous disease.

Description. This is a comparatively rare affection; it is more common in children than adults. It appears in very large vesicles or bullæ, surrounded by a slight zone of erythematous redness. The blebs occur in crops and look like small blisters filled with serum. They are not met with on the scalp; where there are few bullæ we generally find them on the ankle, or on the hand. The disorder may be acute or chronic. It occurs mostly in persons of feeble constitution. Relapses are frequent. Pemphigus may be produced by the administration of iodide of potassium, or by syphilis.

Syphilitic Pemphigus.—Is mainly met with on the soles of the feet and the palms of the hands of the newly born syphilitic children. The bullæ vary in size from that of a pea to a walnut (Anderson and DaCosta).

Causes.—Are unknown.

Treatment. Tonics must be given, and of these the most important are quinine and arsenic. *Local treatment* is effective. The bullæ, if tense, may be opened, and afterwards dusted with a soothing powder. Baths are highly recommended (Anderson).

PRESCRIPTIONS FOR PEMPHIGUS.

℞ Sodii biboratis.....3ss.
 Tragacanth.....3j.
 Spiritus rectificati.....3ij.
 Glycerinæ.....3iv.
 Aquæ destillatæ.....3iss.—M.

Sig.: Smear a little over the excoriated part and allow it to dry.
 —Anderson.

℞ Pulveris lycopodii 3j.

Sig.: Use as a dusting powder after the bullæ are cut. Then use zinc ointment, and then use the following :

℞ Argenti nitratis.....gr. iiij.—iv.
 Adipis3j.—M.
 Ft. ungt.

Sig.: Apply locally. —Tilbury Fox.

PERICARDITIS.

Is an inflammation of the serous membrane (the pericardium) investing the heart. The inflammation may be *circumscribed or diffused, acute or chronic*.

Causes.—*Primary pericarditis* may arise from injuries to the pericardium, or from cold. Secondary pericarditis is more common, and is due to two causes: 1. To an extension of inflammation from neighboring parts, as in pneumonia, left pleurisy, pulmonary tuberculosis, caries of the sternum or ribs, aneurysm of the aorta, endocarditis, etc. 2. To the rheumatic dyscrasia. It also occurs in the course of Bright's disease, acute infectious diseases, as scarlet fever, smallpox, typhus and typhoid fever, and of syphilis and chronic alcoholism. It is of most frequent occurrence in connection with acute articular rheumatism, Bright's disease and pneumonia (Bartholow and Loomis).

Symptoms. Pericarditis occurs most frequently between the ages of 15 and 30. The two prominent rational symptoms are *pain* in the precordial region, and *palpitation*. The pain may also involve the brachial plexus and extend down the left arm. It is sometimes very slight, again it is sharp and lancinating. With the pain there are palpitation, a dry irritable cough, and a sense of constriction over the whole chest, with more or less

dyspnoea. The cough is suppressed and forced breathing increases the pain. If there is much effusion the patient assumes the half sitting posture. The face is often livid and has the appearance of suffering and anxiety. At first the pulse is full and strong, and more or less accelerated. When there is much effusion it is irregular, intermitting, and strongly *dicrotic*. Pyrexia, anorexia, and debility are present. There may be jaundice, headache, and delirium. The pain and soreness usually diminish when the fluid effusion takes place; and now the patient has a sensation of oppression in the cardiac region, with a tendency to syncope on moving. If there be much effusion it will cause dyspnoea, feebleness of the voice, or even aphonia and dysphagia. Cyanosis and turgescence of the cervical veins are sometimes marked, due probably to pressure on the auricles and the venæ cavæ.

Singultus (hiccough) may be produced by pressure on the phrenic or branches of the pneumogastric nerve. As pericarditis is, in the great majority of cases, associated with acute articular rheumatism, Bright's disease, pleurisy or pneumonia, it is imperative to make a physical examination of the heart, when these diseases exist (Flint and Loomis).

Physical Signs. Are most important. They vary in the different stages of the disease. In the first stage, inspection and palpation show an irritable, turbulent, forcible, and sometimes irregular action of the heart. *Palpation* gives a *friction-fremitus* in a few cases for a brief period. This vibration of the chest wall is caused by the rubbing together of the roughened surfaces of the pericardium. To develop this sensation, firm pressure must be made in the intercostal space with the finger tips; as the whole hand laid on the chest may not detect it; it is a rough, jarring, rasping sensation. On auscultation the first positive physical sign of pericarditis is the pericardial or cardiac-friction murmur which is produced by the rubbing together of the two surfaces roughened by exudations. This friction murmur makes the impression on the ear of scraping, grating, creaking and churning. This cardiac friction murmur will be increased in intensity when the body is bent forward, and also by a full inspiration. It is superficial in character, and is double, one sound

is produced by the systolic and the other by the diastolic cardiac movements. The friction murmur and friction fremitus occur within the first two days, and may persist for several days. A friction murmur, if ever wanting in the first stage of pericarditis, is present so generally, that we are warranted in basing an exclusion of the disease on its absence. The murmur is almost pathognomonic taken in connection with the symptoms and history.

In the second or stage of effusion the friction murmur disappears after considerable effusion of liquid has taken place, but it may continue in this stage and also in the stage of convalescence. *Inspection* now shows diminished respiratory movements over the præcordial space and an arching forward of the præcordial region with abolition of the intercostal depressions. *Palpation* shows the *apex-beat* to be weakened, to be raised to the fourth intercostal space and to be carried to the left as far as, or even beyond the line of the nipple. *Percussion* shows an increased area of dullness or flatness in the præcordial region. The form of this dullness is triangular or pyramidal, with the base of the pyramid below and the apex near the sternal notch. Vocal resonance is diminished or absent within the area of dullness or flatness, and also vocal fremitus. In most cases the fluid disappears rapidly within a week or ten days.

The third stage is the stage of absorption. As the effusion is absorbed, the friction murmur and fremitus reappear and the area of dullness lessens (Bartholow, Flint and Loomis).

Differential Diagnosis. — *Pericarditis* may be confounded with endocarditis, hydropericardium, cardiac hypertrophy and left pleurisy. In pericarditis, the friction murmur is a sound of rasping or crackling and superficial in character, varying from one hour to another in intensity and increases with pressure of the stethoscope on the chest wall. It also increases in loudness with the upright position and bending forward. The friction murmur disappears when the effusion reaches a certain amount. There is an increase of percussion dullness.

In endocarditis, the endocardial murmur is a soft, smooth, blowing sound, deep in character, remaining constant, is not affected by pressure of stethoscope on chest wall, and is most

distinct in the recumbent position. The endocardial murmur is permanent. There is no increase of percussion dullness. In *pleurisy*, the friction sound is synchronous with the respiration; in pericarditis it is synchronous with the cardiac movements; suspension of respiration arrests the former, but does not affect the latter. In pleurisy with effusion, all voice and breath sounds disappear; in pericarditis, they are unaffected. *Hydropericardium* is to be distinguished from pericarditis by the absence of fever, local pain and friction murmur.

In *hypertrophy of the heart*, the action is heaving, there is an increase in the force of the apex-beat, and an abnormal intensity to the heart sounds; in pericarditis all these will be diminished in intensity. In hypertrophy of the right heart the præcordial dullness never extends to the left beyond the apex-beat, while in pericardial effusion it may extend one or two inches beyond the apex-beat. In hypertrophy or dilatation of the left heart, the apex-beat is carried downward and to the left, and the area of dullness is increased in the same direction and not to the right, as in pericarditis (Bartholow and Loomis).

Prognosis. Simple and rheumatic pericarditis are not often fatal. As an intercurrent disease, coming on in the course of scorbutis, pyæmia, puerperal diseases, Bright's disease, some of the eruptive fevers, pneumonia, etc., it is extremely fatal. A large amount of fluid may compress and cause paralysis of the heart. In rare instances a fatal syncope occurs (Bartholow and Loomis).

Treatment.—Discover and remove the cause if possible. Absolute rest in bed must be enjoined. Opium is the most valuable internal agent for the pain and constitutional disturbance. As pericarditis is a disease of the weak and feeble, and the young, iron, stimulants, and a highly nutritious and readily digestible diet are the most efficient remedies (Loomis). In the first stage Bartholow recommends a full dose of quinine (gr. xx.) with half a grain of morphia. He would also give five grains of the carbonate of ammonia every two hours, when the exudation is forming. The same authority would give infusion of digitalis in a tablespoonful dose every four hours. To promote absorption, the præcordia may be painted with the tincture of

iodine daily. The operation of paracentesis is required when the effusion is great, or when it is purulent (Bartholow).

PRESCRIPTIONS FOR PERICARDITIS.

R Antimonii et potassii tart..... gr. iv.
Tinct. opii.... ʒj.
Aque camphoræ ʒviij.—M.
Sig.: A tablespoonful every two hours. —Graves.

R Hydrargyri chloridi mitis.....
Pulv. ipecac ... an gr. vj.
Potassii nitratis..... ʒss.—j.—M.
In pulv. no. xii. div.
Sig.: A powder every three hours. —Hartshorne.

R Tinct. aconiti radicis ʒss.
Sig.: Half a drop to a drop every quarter of an hour for two hours, then every hour or two. —Ringer.

R Empl cantharidis.....2x3 inches.
Sig.: Apply over the præcordial space. Repeat at intervals after the skin is healed. (In chronic stage.) —Tanner.

PERIOSTITIS.

Is an inflammation of the periosteum. *Endostitis* is an inflammation of the endosteum. *Ostitis* is an inflammation of bone. Inflammation of these structures may be *acute* or *chronic*.

Causes.—Acute inflammation of bone whether originating in the periosteum or endosteum is chiefly found during the growing period of bone, and is a very grave affection. It occurs in the feeble and cachectic, and in those termed scrofulous. It occurs in the shafts of the long bones as well as in the epiphysis, and in those most exposed, as the tibia and ulna. It is also seen in the femur. It is often the result of some local injury or exposure. In some cases there is no assignable cause (Bryant).

Termination.—It may end in local abscess of bone, in diffused suppuration, or in the more or less complete death of the bone. The bone by the inflammation has been deprived of its vascular supply through a blocking of its capillaries, its death resulting from blood stasis (Bryant).

Symptoms. The disease is usually ushered in with a deep aching pain in the bone, with local tenderness, often a rigor, followed by intense constitutional disturbance and increase of temperature, and by swelling and immobility of the limb. If the origin of the disease is in the periosteum, the skin soon becomes red; if in the endosteum, many days will pass before redness appears. When pus forms, the skin becomes inflamed, rigors become more frequent, pain is more intense, sleeplessness and delirium appear, and unless relief be afforded by a free incision down to the bone, death by exhaustion, and probably by blood-poisoning is apt to occur (Bryant).

Treatment.—In all cases of acute inflammation of bone or periosteum, there is no treatment equal to that of a free incision down to the bone. It is not necessary to wait for the formation of pus before making the incision. The object of the incision is to relieve tension and thereby relieve pain. The limbs should be elevated and hot fomentations applied. Pain should be relieved by morphine (Bryant).

CHRONIC PERIOSTITIS AND OSTITIS.

Are very common affections more particularly involving the shafts of the long bones.

Causes. These affections may be modified by syphilis, scrofula or rheumatism, and may originate from some local cause or injury (Bryant).

Symptoms. Are similar to, though less severe than those of the acute, the most constant being a dull, aching pain in the part of a persistent kind, aggravated at intervals and on hanging down the limb, the pain being almost always worse at night, more particularly in syphilitic affections (Bryant).

Differential Diagnosis.—*In periostitis* the pain is local, with swelling early; tenderness on manipulation is an early and constant symptom; there is enlargement of bone with one or two or more nodes upon its surface, and when suppuration is about to take place, increased swelling, tenderness and redness will be present.

In endostitis the pain is diffused through the whole bone, and will continue for weeks and months without swelling; the

bone may be manipulated without pain, and enlargement of bone in all directions takes place (Bryant).

Treatment. When suppuration does not take place, fomentations, with the elevation of the limb, sedatives to allay pain, and the internal use of the iodide or bromide of potassium are the most efficient means. A blister or tincture of iodine may be useful. When pain is severe opium internally and belladonna externally give relief. When pus has formed make an incision (Bryant).

PERITONITIS.

Is an inflammation of the whole or a part of the serous membrane which lines the abdominal wall and covers the viscera contained in the abdominal cavity. It may be *acute* or *chronic*; *local* (circumscribed) or *general* (diffuse); *primary* or *secondary* (Loomis).

Causes.—Peritonitis may occur at any age in the strong and robust as well as in the weak and feeble. As a primary disease it is rare. The exciting causes are: 1. Intestinal obstructions and perforations. Under this head may be included typhlitis and perityphlitis with ulceration; rupture of hepatic and other abscesses; ulceration and rupture of the stomach, gall and urinary bladder; rupture of hydatid and ovarian cysts; ulcerations and perforations of the intestines in typhoid fever, and syphilitic or tubercular intestinal ulcers. Injections into the uterus, rupture of an organ from a blow or fall, penetrating wounds of the abdomen and necrosis of the spine, ribs or pelvic bones, are causes.

2. *Extension of inflammation* as from the stomach or intestines, from the uterus and its appendages, liver, spleen and kidneys, from typhlitis, perityphlitis, proctitis and periproctitis, ulcer of the rectum, intussusception, volvulus and hernia of the intestine.

3. Peritonitis is frequently an intercurrent malady coming on in the course of a certain cachexiæ, as pyæmia, septicæmia, puerperal fever, albuminuria, the eruptive fevers, erysipelas, long standing ascites, general tuberculosis and cancer, etc. Tubercular peritonitis is met with most frequently in early life, and

cancerous peritonitis between the ages of 40 and 60. Exposure to cold and wet may cause it (Bartholow and Loomis).

Symptoms. If peritonitis is the result of intestinal perforation, its onset will be marked by *excessive pain* over the whole abdomen. In infectious peritonitis, the first symptom will be a *severe chill*. Peritonitis resulting from an extension of inflammation, begins with local and gradually increasing pain. All varieties of acute peritonitis are ushered in by pain as one of the earliest symptoms. The pain may be local or diffuse, and is described as a cutting, burning pain, aggravated by pressure and movements of the abdomen. The pain causes the patient to remain motionless on his back, with the knees drawn up, the respirations are rapid and superficial, and the face, by its pallid, drawn and anxious look is almost diagnostic of the disease. In general peritonitis the abdomen soon becomes distended and tympanitic. At first the abdominal muscles are rigid and contracted, but soon relax. The temperature, in most cases, ranges from 102° to 103° F. In fatal cases it may fall below the normal during the period of collapse.

The *pulse* is accelerated, often reaching 140 per minute. It is small, hard and wiry in character. For hours before a fatal issue it may beat 200 per minute. *Vomiting* is a prominent symptom, and at first articles of food and gastric mucus come up then biliary matters from the duodenum. Whenever stercoraceous vomiting occurs in peritonitis, it is evidence of intestinal obstruction.

The tongue is coated and the appetite impaired at the onset. Constipation is the rule in peritonitis. It is due to paresis of the bowel. The *urine* is scanty, and then there may be retention or strangury, if the inflammation extends to the bladder. In acute peritonitis there is a tendency to heart failure and collapse. In all varieties disease rarely runs a typical course; even pain may be absent. When peritonitis follows intestinal perforation, all the symptoms from the onset are severe. The face quickly becomes haggard, drawn and dejected; the eyes are sunken and surrounded by dark purple rings; the nose and cheeks are pinched, the lips are blue, the voice feeble, the extremities cold and covered with sweat, the pulse very weak, "Cheyne-Stokes"

respiration and death is within 48 hours. The mind is usually clear throughout the entire course of the disease: but in infectious peritonitis loss of consciousness, apathy, or delirium may precede death by a few hours. In cases of much effusion the pain subsides. In suppurative peritonitis the pain is frequently absent, but typhoid symptoms are present from the onset, delirium and rigors are common, and the pulse becomes very rapid. Occasionally, when perforation of the bowel or stomach takes place, the patient has the feeling as if something had suddenly burst or been torn within the abdomen.

Local or Circumscribed Peritonitis.—Usually pursues a sub-acute rather than an acute course. *Chronic peritonitis* (non-tubercular and non-cancerous) is usually the sequel of an acute attack. If an acute attack does not subside in one week, it becomes chronic and there is a gradual increase in the size of the abdomen, with rigors and sweats. There is rapid loss of flesh and strength. The face is haggard and drawn. The pain assumes a colicky character and is a "dull ache." The pulse is small and rapid. There is anorexia with vomiting. The temperature is 99° to 104° F.

Tubercular Peritonitis.—In tubercular peritonitis the pain is paroxysmal in character. It often occurs suddenly with rapid and feeble pulse, fever, nausea, vomiting and diarrhoea. The tongue is coated. The skin is harsh and dry. There is great thirst and rapid loss of flesh and strength. Typhoid symptoms come on early. Effusion into the peritoneal cavity takes place and the patient dies of asthenia. Redness and oedema about the umbilicus are regarded as characteristic of tubercular peritonitis. Hectic fever is accompanied by profuse sweats during sleep, and the abdomen has a doughy feel. The pain may be so slight as to amount only to a sense of tension and fullness in the abdomen. Some cases are unattended by ascities, and knots of intestine embedded in firm hard masses are felt in the region of the umbilicus. Friction sounds may be heard over these masses. Tubercular peritonitis may have for its chief and only symptoms ascites, anaemia, and the evidences of general tuberculosis. Occasionally its progress is interrupted, and there is marked improvement and cessation of all the abdominal symptoms, and then

there follows a period when death seems imminent. The mesenteric glands are usually enlarged.

Cancerous Peritonitis.—Is attended by the same local symptoms as tubercular. Sometimes a tumor may be felt, especially in the region of the omentum and mesentary. *There is always ascites:* the fluid collects gradually, and often in very large quantities. In some cases the abdomen is very sensitive, and paroxysms of colicky pains are frequent. The temperature rarely reaches 100° F. The diagnosis rests on the presence of a gradually increasing tumor and the cancerous cachexia (Bartholow and Loomis).

Differential Diagnosis.—Peritonitis may be confounded with intestinal colic, intestinal obstruction, enteritis, abdominal neuralgia, hysteria, rheumatism of the abdominal muscles, renal and biliary colics, and suppurative cellulitis of the abdominal walls. The ascites of chronic peritonitis may be mistaken for that of the last stages of cirrhosis of the liver. Gastric symptoms are prominent in *cirrhosis* and absent in *peritonitis*. The countenance has a clay-colored or jaundiced hue in cirrhosis; in peritonitis it is pale and anxious. The liver is diminished and the spleen increased in size in cirrhosis. The abdomen is excessively tender in chronic peritonitis, and the fluid accumulates more rapidly than in cirrhosis. In peritonitis there is usually a distinct febrile movement, the pulse is accelerated and is tense and wiry in character. In *colic* there is no fever or increase in pulse-rate, the rule being rather a slowed pulse. In *peritonitis* the patient avoids the slightest motion of the body, and firm pressure over the abdomen increases the pain, while in colic the patient tosses from one side to the other, and firm pressure over the abdomen relieves the pain. The pain of peritonitis is constant, that of colic paroxysmal.

Intestinal obstruction, if it begins with colicky pains, is soon attended by fæcal vomiting, the pain is localized, there is a subnormal temperature and more distention of the abdomen; while peritonitis is attended by fever, by great tenderness on pressure, by a tense, hard, wiry pulse, and by rigidity of the abdominal walls. *Peritonitis* comes on rapidly, and at its onset the abdomen becomes exceedingly tympanatic and tender to

pressure, while enteritis comes on slowly and excessive tympanites is rare. In enteritis the vomiting is severe; in peritonitis rare. There is constipation in peritonitis, while diarrhoea is the rule in enteritis. The pulse is tense and wiry in peritonitis, rapid and feeble in enteritis. The fever is higher in enteritis. The symptoms of collapse, the anxious face, superficial respiration, and immobility of the patient are characteristic of peritonitis.

In abdominal neuralgia, the pain simulates that produced by a tightly drawn cord about the abdomen, and follows the course of the genito-crural nerve. There is tenderness on pressure only at the point of exit of the nerve from the spine. The tympanites, the ascites, the fever, the rapid pulse, the signs of collapse, and the muscular rigidity of peritonitis are all absent in neuralgia. *In hysteria* the firmest pressure does not increase the pain if the attention of the patient is engaged.

The rapid pulse, fever, signs of collapse, and anxious face of peritonitis are absent, and there is present the *globus hystericus*, and the attack is followed by the passage of a large quantity of watery, straw-colored urine. *In rheumatism* of the abdominal muscles, the pain and tenderness are most intense at the origin and insertion of the muscles. There is no fever, no vomiting, and no signs of collapse. The pulse is normal. There is a history of rheumatism. *In biliary colic* the patient throws himself about in excruciating agony, and the pain is referred to the region of the common bile-duct, is paroxysmal in character, and will shoot back from the margin of the ribs over the gall-bladder to the spinal column. If it continues 24 hours the patient becomes jaundiced. *In renal colic*, the pain radiates from the kidney along the ureter to the testicle which is retracted. In both these colics there is no fever, no rapid pulse and no tympanites or tenderness on firm pressure. *In suppurative cellulitis*, of the abdominal walls, the superficial swelling and the absence of constitutional symptoms of peritonitis establish the diagnosis (Bartholow, Flint and Loomis).

Prognosis.—Acute general peritonitis is always a grave disease. Its average duration is from four to eight days. The usual termination is in death. When it arises from perforation, a fatal result may occur in two or three days. The gravest cases

are those which occur in the course of septic diseases. General puerperal peritonitis is almost always fatal. Peritonitis from rupture of an organ is always fatal. The prognosis is favorable when the peritonitis is due to extension of inflammation from a viscus. Tubercular peritonitis, after weeks and months of anæmia and exhaustion, terminates in death. The same may be said of carcinomatous peritonitis (Bartholow and Loomis).

Treatment. In the strong and robust at the very onset of the attack, ten to twenty leeches may be applied over the abdomen. While acute peritonitis is progressing the bowels *cannot be moved*, and no benefit would result if they were, so that under no circumstances should there be an attempt at purgation. The *opium plan* of treatment first developed and brought to the notice of the profession by Prof. Alonzo Clark, is the most efficacious. With the first symptoms of peritonitis, give at one dose from two to five grains of opium, or one-half to one grain of morphine every two, four, six or eight hours according to the effect. The rule is to bring the patient as soon as possible fully under the influence of the drug, and maintain a moderate degree of narcotism, not until all pain and tenderness have subsided, but until the pulse has reached its normal standard and tympanites has entirely subsided. When the patient is fully under the influence of the opiate, the entire surface of the body becomes bathed in a profuse perspiration. In 24 hours a rash, due to the opium, will make its appearance with an itching of the surface and nose. The pupils become contracted, the eyes suffused, the countenance assumes a dull expression, there is a constant desire to sleep, the pulse becomes less rapid, and the respirations may be only twelve in a minute. Now the patient is in the condition in which it is desirable to keep him, and with the respirations at twelve per minute he is perfectly safe. If it is found difficult to arouse the patient, the administration of opium must be stopped until he can be easily aroused. When the pulse becomes less frequent and the tympanites subsides, one may be certain that he is controlling the peritonitis. By this plan of treatment an acute peritonitis may be controlled within 48 hours from its onset; but the treatment must be continued four or five days longer for fear of relapse.

Wait at least a week before giving a cathartic (castor oil). The local applications should consist of warm fomentations, mustard plasters, or tincture of iodine. At the beginning large doses of quinine are in a high degree beneficial. The vital powers must be kept up by suitable nutrients and stimulants. Ice may be given to relieve the thirst. If hiccough is distressing, it should be relieved temporarily by the inhalation of chloroform. Vomiting is sometimes allayed by carbonated water, ice and champagne, or hydrocyanic acid. Turpentine, as an injection and employed locally will sometimes relieve the tympanites. Bartholow believes that ten grains of the carbonate of ammonium in an ounce of the solution of the acetate, every four hours, when the exudation is going on, is a remedy of the highest utility. In the *peritonitis from perforation* absolute repose, opium, ice, and the avoidance of all foods and drinks, are the proper measures. In *puerperal peritonitis*, great attention should be paid to the uterus. In *chronic peritonitis*, iodide of potassium should be given internally, and iodine and mercury should be applied locally. The effusion may be removed by tapping. In *tubercular peritonitis*, small doses of opium, with tonics and cod-liver oil, may be given, and warm anodyne applications to the abdomen. In *cancerous peritonitis*, the treatment is symptomatic (Bartholow, Flint and Loomis).

PERTUSSIS.

Called also *whooping-cough*, is an acute contagious disease, occurring chiefly in childhood, and once only during life; it is characterized by successive forcible expirations, and at their termination by a loud, resounding, sonorous inspiration (Bartholow).

Causes. A large majority of the cases occur between the ages of one and ten years. The special exciting cause of this disease is a contagious principle which acts upon the respiratory organs. The specific poison is given off in the breath of the affected and conveyed through the air, or in clothes to the healthy. It affects all races and classes and is more prevalent in winter and spring. It may occur as an epidemic. The period of incu-

bation varies from five days to two weeks (Smith and Bartholow).

Symptoms.—There are three stages of this disease; first, that of catarrh of the air-passages; second, the stage of spasmodic cough; third, the stage of decline. *The first stage* is characterized by the symptoms of coryza and bronchitis. The eyes may be suffused, there is sneezing, cough begins, and there may be fever, thirst and impaired appetite. The duration of the first stage varies from eight to fifteen days. *The spasmodic stage* is characterized by the spasmodic cough. The cough consists of a succession of short, rapid expiratory efforts; the face gets red; the eyes swell and protrude and the body is bent forward in coughing, then when the breath is entirely exhausted, a deep, loud, crowing inspiration occurs. During each paroxysm there may be two, three or more of such efforts, and at the expiration of them the patient brings up a quantity of tenacious, glary mucus, and is often accompanied by vomiting. The duration of the paroxysms varies from a few seconds to several minutes, and the number of them daily, varies from ten to a hundred. They are most frequent at night. The duration of the second stage is from 30 to 60 days. *The third stage or stage of decline* is short, not continuing longer than two or three weeks (Smith and Bartholow).

Complications. The cerebral complications consist in convulsions, hydrocephalus, and cerebral congestion. The lung complications are pulmonary congestion, bronchitis, pneumonia and emphysema. Capillary bronchitis and pneumonia are always serious complications (Smith, J. L.).

Prognosis.—Whooping-cough is always a serious disease, although it is rarely directly fatal; yet indirectly it frequently causes death (Loomis).

Treatment. Is symptomatic. Alum is recommended by Golding Bird (gr. iv. every four hours), and Meigs says it is the best remedy. In the catarrhal stage the following formula of Bartholow may be used:

℞ Syrupi scilla comp. ʒi.
Tinct. aconiti rad 2℥xvj.
Tinct. opii deodorat 2℥viij.
Syrupi tolu ʒvi.
Aqua lauro-cerasi ʒj —M.

Sig.: A teaspoonful every two, three or four hours.

Tincture of aconite, tincture of belladonna, deodorized tincture of opium and fluid extract of ipecac in suitable proportions according to age, is a most serviceable combination. If the child is old enough a gargle of bromide of potassium may be used with advantage.

Bartholow would give, in the spasmodic stage, opium, in the form of codeine, which can be employed with proper precautions, even in the case of infants. A slight hypnotic effect should be maintained constantly. The mono-bromide of camphor in from two to ten grains every four hours seems to be most beneficial. The very best results, and often an immediate arrest of the disease, can be procured by full doses of quinine. Dilute hydrocyanic acid and nitric acid well diluted are useful remedies. Good results are obtained by inhalation of carbolic spray in many cases. A one per cent. solution is strong enough for this purpose. Sonnenberger regards antipyrine as a specific in doses of one and a half grains three times daily for a child one year old. Peroxide of hydrogen has been used as a spray to the fauces with some success. Whooping-cough is a self-limited disease and must be treated expectantly. The patient, by warm clothing, should guard against undue exposure (Smith, Bartholow and Loomis).

PHAGEDENA.

Is molecular gangrene, or rapid ulceration. This variety of ulcer spreads with great rapidity, destroying everything within its reach.

Causes.—Are general and local. Bad hygiene, misery, digestive troubles, scrofula, scorbutus, malaria, chronic alcoholism and old age are prominent general causes. It is frequently met with in persons broken down with disease, or who are much debilitated. The local causes are: lack of cleanliness, phimosis from retention of pus, and all sorts of local irritation. *Phagedena*, most commonly found with chancre, is not confined to this variety of sore. Syphilitic chancre is sometimes phagedenic; different ulcerated syphilides and scrofulides occasionally become phagedenic.

Phagedena attacks virulent bubo perhaps as often as it does chaneroid. *Phagedena* is not a property belonging to chaneroid pus, it is rather a property of the tissues of the patient. Hence the conclusion is, that there is no special phagedenic virus. No definite duration can be assigned to phagedena. The bottom of a phagedenic ulcer is liable to be covered with a slough which is of a grayish color. The discharge is serious, profuse, and highly offensive (Keyes). Phagedenic sores are rarely seen except in connection with syphilis or hospital gangrene. In syphilis sloughing is found in the intemperate and ill-fed, and mostly in gin-drinking prostitutes (Bryant).

Treatment.—Cleanse the part by soaking up with absorbent cotton all the discharges from the ulcer that may be present; then destroy the edges of the ulcer with some one of the acids. When this has been done, touch the edges of the sore with absorbent cotton saturated with nitrate of mercury one part, water eight parts, and insert the cotton under the undermined edges of the sore. Having done this, sprinkle the edges with iodoform. Surrounding the slough is an acutely inflamed surface; paint this with the tincture of iodine and dress the limb with a solution of acetate of lead and laudanum, keeping the parts in an elevated and relaxed position. Give the patient nourishing diet, quinine and iron, and stimulants if necessary. If the pain is severe give one grain of opium every eight hours (Horwitz).

PHARYNGITIS.

Is an inflammation of the mucous membrane of the tonsils, uvula, soft palate, and pharynx. It may be acute or chronic (Loomis).

Causes.—The most prolific cause is taking cold. Next to this is the use of cigarettes, and then comes alcoholic excess. Diphtheria, the eruptive fevers, and inflammatory affections of the air passages are accompanied by this disease. *Acute pharyngitis* is one of the forms of "ordinary sore throat." It occurs most frequently in children and in young adults. One attack predisposes to others. *Chronic follicular pharyngitis* may be produced by prolonged use of the voice in public speaking or

singing. Weak, scrofulous persons are affected with it. It is sometimes called *clergyman's sore throat* (Bartholow and Loomis).

Symptoms. In acute cases, there is at first an unpleasant, stuffy and dry feeling in the naso-pharyngeal space, followed later by secretion. There may be severe headache and pains in the upper jaw. Breathing through the nose is difficult. The voice is thick and nasal. An acute attack subsides in a few days. In the chronic form, the posterior nares are more or less obstructed by the swelling of the mucous membrane. Pain in the ear may be felt, and dullness of hearing is a common symptom from obstruction of the Eustachian tube. The mucus in the pharynx excites frequent attempts to swallow, and patients often "clear the throat" before speaking (Bartholow).

Treatment. In acute pharyngitis, ice cold carbonated water affords the greatest relief during the first twenty-four hours. The throat and mouth should be frequently sprayed with a solution of alum, tannin or sulphate of zinc, and at the same time the wet pack should be applied to the throat either hot or cold. The naso-pharyngeal cavity may be washed out with a solution of common salt or carbonate of sodium. Of the gaseous remedies none is so curative as ethyl-iodide which can be inhaled without apparatus. It can be vaporized at 100° F., and the simplest inhaler used. The vapor may be inhaled once daily through the nose for sometime. As a topical remedy a mixture of tannin and iodoform in finely divided powders, administered by insufflation is very effective (Bartholow and Loomis).

PHLEGMASIA ALBA DOLENS.

Called also "milk-leg," is a swelling of one or both lower extremities, occurring usually between the tenth and twentieth day after confinement, and characterized by pain, tension of the skin, and a milk-like whiteness of the surface. Owing to its color and its supposed origin, it has received the popular name of *milk-leg* (Lusk).

Causes.—*Phlegmasia* is an affection of the connective tissue, and is associated in most, but not in all, cases with thrombosis

of the veins. In a certain proportion of cases phlegmasia is obviously the extension of an inflammation from the genital organs to the perineum, the nates, and the upper portion of the thigh. When the morbid changes follow the sheaths of the vessels, the walls of both veins and lymphatics thicken, and in most cases secondary thrombus formation results. A slowing of the blood current, and varicose veins, predispose to thrombosis. The crural and its branches, the tibial and peroneal veins are the ones usually involved. The intra-venous coagula may start from the placental site, and thus obstruct the veins. Thrombus formation may begin during pregnancy, and is then usually attended with pain at the seat of trouble, and with stiffness in the toes or the dorsum of the foot (Lusk).

Symptoms.—Often phlegmasia is preceded by gastric disturbances, as lack of appetite, a furred tongue, constipation and chilly sensations. Sometimes the inflamed or thrombosed veins may be seen in the popliteal space or upon the inner surface of the upper portion of the thigh. The first characteristic symptom is a dull, dragging pain in the limb, which is increased by motion. There may be fever. In *primary thrombosis* the swelling usually begins at the ankle, and extends rapidly upward; in secondary thrombosis, the swelling begins at the inguinal fold and extends to the ankle (Lusk).

Termination.—The ordinary termination of phlegmasia is by absorption of the thrombus. The period of extreme tension of the skin lasts for from five to eight days, and then recovery takes place slowly requiring three to six weeks. In a few cases, the thrombus may organize and permanently occlude the vessel. In rare instances the process may terminate in suppuration and abscess formation (Lusk).

Treatment.—Opium must be given to alleviate the pain, cathartics to unload the bowels, quinine, iron and good food to sustain the strength, and rest for the swollen extremity. The limb should be elevated. Absorption should be promoted by gentle friction with alcoholic lotions, and by bandaging the entire limb evenly with a flannel roller. The patient should under no circumstances be allowed to leave her bed until well (Lusk).

PHTHISIS.

General Considerations.—Is derived from a Greek word which means to pass or waste away. It was formerly applied to all wasting diseases, irrespective of their causes. At the present day the term *tuberculosis* is supplanting the word *phthisis*, and very properly too, since the former expresses more accurately the condition than the latter. By the term *tuberculosis*, we mean a diseased condition caused by the introduction into the body of the *tubercle bacilli*. Specific nodules develop, which invade one organ or the entire system. Tuberculosis may be *local* or *general*. It is local when limited to one organ, as the lungs, kidney, liver or peritoneum. It is general when large numbers of tubercle bacilli enter the blood current and develop in the various organs of the body a multitude of miliary tubercles, called *acute miliary tuberculosis*. The tubercle bacilli and their spores travel in the blood current and wherever they lodge, a tubercle is developed. The tubercle therefore, is the result of an inflammatory process, and the infection which excites the inflammation is a specific vegetable parasite, called the tubercle bacillis, which gains entrance into the body through the respiratory and digestive tract. We finally conclude that tuberculosis is an infectious disease and that its cause is the tubercle bacillus (Loomis and Flint).

Tubercle.—Wherever the bacillus lodges and finds conditions suitable for its development and multiplication, there are found in a short time small, gray, translucent nodules, looking like particles of coarse sand, which are called miliary tubercles. Tubercles are non-vascular structures, no vessels have ever been found in them. They undergo caseous or cheesy degeneration. As they are non-vascular, their centres are shut off from nutrition, and as they are subjected to the necrotic action of the tubercle bacilli, in a short time they die and undergo what is called "coagulation necrosis." A small abscess is thus formed, and the union of several of these small abscesses form cavities. Instead of the course just described, these cheesy masses may become encapsulated, calcified, and remain as inert masses for an indefinite period. Again, the tubercle may undergo fibroid changes, the tissues surrounding the tubercle taking on a chronic

fibroid inflammation, the newly formed connective tissue contracts, and compressing the tubercle, converts it into a fibrous nodule. This change is most likely to occur in the aged, and in those of a strong fibrous diathesis (Loomis).

Questions.—The following questions have been asked and answered by Prof. Loomis:

1. "Can man become infected with tubercle by eating tubercular meat, or by drinking the milk of tubercular cows?"

2. "May not the tubercle bacilli contained in the sputum and other discharges from tubercular subjects be infecting agents, and thus render tuberculosis a contagious disease?"

3. "As the tubercle bacilli preserve their vitality for a long time outside the body, may not those contained in the sputum of tubercular subjects, after the sputum becomes dried and pulverized, be inhaled with the air as dust particles, and set up tubercular processes in the respiratory organs of non-tubercular subjects?"

4. "As a preventative measure for the spread of phthisis, should not the sputum and other discharges be burned or disinfected in their fresh state?"

Answers.—"Accepting the doctrine that the tubercle bacillus is the only cause of tuberculosis, we are compelled to answer these questions affirmatively, and to say that the doctrine of heredity of tuberculosis must be abandoned, the tubercular taint being nothing more than a hereditary enfeeblement, which furnishes a better soil for the lodgment and development of the tubercle bacilli, or a physical condition which is less able to resist their invasion.

The terms phthisis, pulmonary phthisis, phthisis pulmonalis, pulmonary consumption, and pulmonary tuberculosis are used interchangeably.

Forms of Phthisis.—Bartholow gives four forms of phthisis:

1. The phthisis of caseous pneumonia. 2. Tubercular phthisis. 3. Fibroid phthisis. 4. Acute miliary tuberculosis, or general tuberculosis. Loomis gives two distinct varieties of pulmonary tuberculosis: 1. The acute. 2. The chronic. He further divides the chronic into the following: 1. Pneumonic tuberculosis, caseous pneumonia, or catarrhal phthisis. 2. Disseminated

tuberculosis. 3. Fibrous tuberculosis, or fibroid phthisis. He also discusses acute miliary tuberculosis.

As respects the essential nature of this disease, there is no difference, all these forms being characterized by the presence and development of the bacillus tuberculosis.

I. The Phthisis of Caseous Pneumonia.—Caseous phthisis is that form of pulmonary consumption characterized by the caseation or cheesy degeneration of inflammatory products in the lungs, and the subsequent softening and extrusion of the caseous matter with greater or less destruction of the pulmonary tissue.

II. Tubercular Phthisis.—Is that form of pulmonary consumption characterized by the deposit of gray tubercle; by the changes due to such deposit, its softening and extrusion, and by the greater or less destruction of the proper tissue of the lungs.

III. Fibroid Phthisis.—Is a form of consumption characterized by hyperplasia of the connective tissue of the lung and atrophy and degeneration of its proper structure, with, finally, tubercular deposits.

IV. Acute Miliary Tuberculosis.—Is characterized by the presence of miliary tubercles in most of the organs of the body (Bartholow).

Pathological Anatomy.—In most cases of pulmonary phthisis all of the structures which compose the lungs are the seat of morbid changes. There are lesions of the bronchi, of the alveolar passages and air-cells, of the blood-vessels, of the lymphatic vessels, of the interstitial connective tissue, and of the plura. The characteristic lesions of phthisis are tubercles and inflammatory processes with a tendency to caseous degeneration. Another morbid change of great importance is the formation of cavities. The morbid appearances are so manifold that it may be said that no two cases of phthisis are exactly alike. The dominating element in the pathological anatomy of pulmonary phthisis is tubercle. Tuberculous nodules or granules may be seen with the naked eye, and when young are gray or translucent, but oftener they appear opaque and yellowish, having undergone partial or complete caseous degeneration. They

vary in size from a millet-seed to a pea, and are often larger.

A favorite and early situation for the formation of miliary tubercles is in the walls of the small bronchi or bronchioles. Many tubercles are composed of groups of air-cells filled with epithelial and lymphoid cells with or without giant cells. In the majority of cases tubercles are formed primarily at the apex of the lung. In acute miliary tuberculosis miliary tubercles are found scattered throughout both lungs. In these cases the tubercle bacilli are conveyed to the lungs by the blood-current. The usual mode of access of the tubercle bacilli to the lungs is by the respiratory passages. The production of cheesy pneumonia is an effect of the tubercle bacilli. In rare instances caseous pneumonia involves a whole lobe or a whole lung (*phthisis florida*). In most cases of rapid or the so-called *galloping phthisis* (*phthisis florida*) more or less extensive patches of caseous pneumonia form the greater part of the lesions.

Tubercles are non-vascular structures and the pre-existing vessels, where the tubercles develop, become obliterated, partly by thrombosis and partly by an accumulation of epitheloid and lymphoid cells in their lumen. The mucous membrane of the bronchi is always inflamed in phthisis, and contains tubercles. Ulcers usually of tuberculous origin are frequent. Some form of *peribronchitis* is a constant attendant of phthisis. Inflammation of the interstitial tissue of the lung, leading to the formation of new connective tissue, is called fibroid phthisis. In this case the affected lung is diminished in size.

Pulmonary phthisis is always accompanied by pleuritis, usually of the dry form. The pleuritis leads to the formation of vascular adhesions. Of the non-inflammatory changes there are pigmentation with coal particles; calcification of caseous material; and localized and general oedema. After a variable period *cavities* are formed in the majority of cases of phthisis. They are of two kinds—those due to dilatation of the bronchi, *bronchiectases*, and those resulting from the softening of cheesy material and its removal through the bronchi—*ulcerative cavities*. The greater part of a lobe, usually the upper lobe, may be converted into a single cavity. The cavities are, as a rule, irreg-

ular in form, and are often traversed by bands of fibrous tissue containing blood-vessels, the rupture of which may be the source of dangerous hemorrhage. In cases of fatal hæmoptysis the source of the hemorrhage is usually to be found in an aneurism about the size of a pea, which projects from the side of the artery into the cavity. As the expectoration contains tubercle bacilli, it is common to find tuberculous lesions in the respiratory tract above the lungs, especially in the larger bronchi, the trachea and the larynx. These lesions are usually in the form of tuberculous ulcers, and are in nearly all cases secondary to the pulmonary affection. By swallowing sputum which contains the tubercle bacilli, the tuberculous virus may gain access to the intestinal tract and cause tuberculous ulceration which is most frequently in the lower part of the ileum. From the intestine the bacilli may be readily conveyed to the peritoneum, the mesenteric glands, the liver, etc. In most cases of pulmonary phthisis the primary infection takes place by inhalation of the tubercle bacilli in the apex of the lung. The bacilli are incapable of development at a temperature below 82.4° F. and above 107.6° F., the most favorable temperature for their growth being about that of the human body (Flint and Bartholow).

Causes.—The proof that the *tubercle bacillus* is the specific cause of tuberculosis may be considered complete. This bacillus was discovered by Prof. Koch in 1882. The disease is never produced without this parasite, but the efficiency of this agent depends on the predisposition or diathesis. The latter alone is incapable of producing the disease. If the introduction of the parasite into the air passages could be prevented, the disease would not be produced, no matter how strong the predisposition; and on the other hand, if the predisposition be wanting, the disease will not be produced, no matter how great the exposure to the specific cause. *When it is considered that about one-seventh of all human beings die of phthisis, it is not difficult to account for the wide distribution of the tuberculous virus.* The bacillus tuberculosis is not capable of multiplication outside of the animal body, and hence pulmonary phthisis is not only an infectious, but a contagious disease. The most fruitful source of tuberculous infection is to be found in dried phthisical sputum.

That it may come from the milk of tuberculous cows is certain. Facts show the tuberculous predisposition or diathesis in a certain proportion of cases to be congenital and inherited. The *predisposition* has a relation to age. The disease is most liable to be developed between 20 and 30; then 30 and 40, 40 and 50, 50 and 60, birth and 10, 60 and 70, 70 and 80, 80 and 90, 90 and 100. No age is exempt from a liability to the disease, and it may affect the *fœtus in utero*. *Climate* appears to exert an influence either for or against the development of the disease. The prevalence of the disease is less in climates either uniformly warm and dry or uniformly cold and dry than in those which are moist and subject to frequent alterations of cold and warmth. It is rare in the torrid and frigid zones, and frequent in the temperate. According to Dr. Hjaltekin, who resides in Iceland, the inhabitants of that country enjoy exemption from phthisis.

A high altitude seems to afford protection against the disease. In Alpine situations elevated 4000 feet, tuberculosis is almost unknown. The condition of the soil of a region favors or is antagonistic to phthisis, light, sandy, porous soils are antagonistic; while heavy wet, hard, clayey, impermeable soil, and sudden changes in the temperature are the most favorable conditions for developing phthisis. Want of sunlight, defective ventilation, lack of exercise, and the depressing emotions act as strong predisposing causes. As regards season, the disease is oftener developed during the spring months and the hot months of summer than at other seasons of the year. Tuberculosis may be communicated by the use of dishes, napkins, handkerchiefs, and other personal belongings of phthisical subjects; by the use of milk of tuberculous women, and possibly by tuberculous meat. The scrofulous or strumous constitution may constitute the tubercular diathesis; but according to Loomis, phthisis may develop without this vice of constitution. Mothers transmit phthisical tendencies more certainly than fathers. But when one parent alone is affected, the mother is more apt to transmit to the daughters than to the sons, and vice versa. A phthisical vice of constitution may be inherited by the children of the aged, of drunkards, of those enervated by excesses, and of those who at the time of the birth of their children were suffering from some

form of constitutional disease, such as cancer, syphilis, or gout. Children of consanguineous marriages are especially liable to pulmonary phthisis.

Improper and insufficient food is an influential cause of tuberculosis. The repugnance to fat, which is so often manifested by the phthisical, is unfortunate since it is so necessary as a force furnishing food. The frequency of phthisis in clerks, printers, tailors, milliners, seamstresses and factory employees, who live in a hot, close, dust laden atmosphere proves that bad ventilation, impure air, and an indoor life are strong predisposing causes. Of indoor workers those are most liable to phthisis who exercise least at their vocation. Compositors suffer oftener than the press hands in the same room. Prison and cloister statistics show a mortality from phthisis of from forty to fifty per cent. while that among the people at large is only fifteen per cent. From these considerations, it is evident that the feebleness of constitution which predisposes to phthisis can be acquired as well as inherited. Loomis is convinced that the phthisical development depends as much upon the anti hygienic influences under which childhood has been passed as upon hereditary tendencies.

Local Causes.—Loomis believes that bronchitis of the smaller tubes and chronic lobular (catarrhal) pneumonia are the starting points of a large number of cases of phthisis. The catarrhal condition of the mucous membrane in these cases furnishes the favorable soil for the development of bacilli. Loomis says, "That pulmonary phthisis not infrequently dates from a *pleurisy* is evident to every careful observer." He also says that bronchial hemorrhage is frequently the first and only sign of phthisical development. The mechanical irritation of the bronchi produced by the constant inhalation of an atmosphere laden with dust leads to phthisis. The phthisis of knife-grinders, stone-cutters, potters, and coal miners are examples of this. *Pregnancy*, instead of preventing phthisis, predisposes to it. According to Loomis, emphysema and goitre do not afford immunity against phthisis. The notion that malaria and marsh fevers are antagonistic to phthisis is disproved by every day experience. Patients in whom all inflammatory processes tend to necrosis and suppuration are more liable to acute phthisis. Flint says that

measles and typhoid fever leave the system in a condition favorable for the development of tuberculosis. He also asks "Are they who suffer in early life from a scrofulous affection of the lymphatic glands of the neck especially prone to pulmonary tuberculosis in after life"? He answers this question in the negative, and says "Assuming tuberculosis and the scrofulous cachexia to be identical as has been proved by the presence in both of the bacillus tuberculosis, it would seem that the predisposition is, as it were, exhausted by the affection in the glands of the neck, and that afterward it is not likely to occur."

Flint believes that bronchitis, acute or chronic, has no tendency to eventuate in phthisis, and that acute pleurisy, lobar pneumonia, and bronchial hemorrhage have no causative relation to pulmonary phthisis. The opinion, which is held by some writers, that chronic pharyngitis (which is an exceedingly common affection in this part of the world), has a tendency to eventuate in pulmonary phthisis, is erroneous according to Prof. Flint. The sebum-like matter which is liable to accumulate in the glands of the tonsils and coughed up in the form of round hard pellets, is sometimes mistaken for tubercles. They emit a fetid odor when touched. Bartholow believes that one of the factors in determining tuberculosis of the lungs is a badly formed thorax. Flint does not believe this. Bartholow says: "Although the bacillus tuberculosis has been widely accepted as the cause of phthisis, yet opposition is developing in various quarters." Dr. Spina, of Vienna, chief assistant to Stricker, opposes Koch at all points, and maintains that the bacillus has not a constant form, but varies with the tissue and local condition; that it is not essential to the tubercular process, and that it is frequently absent in undoubted tubercular disease. From the practical side, Koch's theory has received a severe blow in two cases, which have recently occurred at Nothnagel's clinic. In both tuberculosis was diagnosticated, because the bacilli were detected in the sputa. Yet, on post mortem examination, both were ascertained to be examples of bronchiectasis, and no tubercles existed at any point. It follows, from these facts, that the parasitic nature of tubercular phthisis must be regarded as *sub judice*. The physician should not rush to the conclusion that the

parasitic nature of phthisis is proved (Flint, Loomis and Bartholow).

Symptoms.—Phthisis presents itself in a *chronic* and in an *acute* form. The chronic variety is by far the most frequent. It is essentially the "consumption" which is such a scourge to the human race. The harassing cough by day and by night; the impaired appetite and disturbed digestion; the loss of blood from the lungs; the steadily augmenting debility; the short breathing; the exhausting night sweats; the hectic fever; the deceptive blush which this imparts to the cheek; the increased lustre of the eye; the singular hopefulness; the temporary improvements; the relapses; and the greater vividness of the imagination, so strongly contrasting with the waning frame are phenomena with which sad experience has made not only every physician but many a fireside familiar (DaCosta). The most constant of all these symptoms are the hemorrhage, the cough and the emaciation. Phthisis is often remarkably insidious in its development.

Cough.—Of the pulmonary symptoms, the first which occurs is cough. The cough is at first and for some time slight, dry, hacking and perhaps it excites little or no attention. It continues throughout the whole course of the disease. It may exist before there are any physical signs, and then there is little or no expectoration. It may amount only to a "clearing of the throat." The severity of the cough without expectoration is a measure of the extent to which the pleura is involved. The younger and more excitable the patient, the more paroxysmal is the cough. It is usually worse in the morning on rising or just after lying down at night. Lying on the affected side often brings on a violent paroxysm. Some cough after the slightest exertion. In severe paroxysms of coughing, in the last straining effort to dislodge the sputa, vomiting is excited, an accident very apt to occur after meals. The cough in the second stage usually becomes prominent. It may be less irritable and more exclusively for expectoration. In advanced phthisis, where cavities have formed, the cough becomes "hollow" in character. The cough is very troublesome if the contents of the cavities are not easily evacuated (Bartholow, DaCosta, Flint and Loomis).

Expectoration.—May accompany cough from its commencement. At first it is tenacious, glairy, frothy and mucous. As the disease advances it thickens. It becomes greenish in color, streaked with yellow, and “nummular” (consisting of large greenish masses of a rounded form, which masses do not sink in the cup containing them, but float imperfectly in a thin serum.) This expectoration is not pathognomonic of phthisis, as it may occur in chronic bronchitis. Dots and streaks of blood in catarrhal sputa indicate a recent lobular pneumonia. The sputa in the earlier stages—often for months—are muco-purulent. When shreds of elastic tissue are found, it indicates softening and destruction of lung tissue. As cavities form, the sputa becomes more purulent, sometimes being composed wholly of fluid pus, which may be fetid and greenish and contain small masses of cheesy matter and the tubercle bacilli. In the last stages of consumption the sputa may have a dirty-grayish aspect. The *quantity* of expectoration is very variable, amounting in some cases to only a few ounces, and in other cases to a pint or more daily. Sometimes the expectoration presents a thick, opaque appearance like that of pea-soup or gruel, or it may resemble boiled rice. The expectoration is usually more abundant in the morning than at any other time, owing to its having accumulated during sleep. Occasionally the matter expectorated and the breath of the patient emit considerable fetor, due to putrefaction of the contents of cavities (Bartholow, DaCosta, Flint and Loomis).

Hæmoptysis.—Is a very important symptom of phthisis, and may occur during any stage of the disease. It may be the first symptom. Hæmoptysis is more frequent in the first stage, than in the second. The blood may simply streak the sputa, or a pound or more may be expectorated at one time. The blood is bright colored, more or less aerated, and comes up with coughing; but a sudden large hemorrhage may pour up in a stream and be ejected by the nose as well as the mouth. Hemorrhages that occur in the early stage of pulmonary phthisis are, in the majority of instances, bronchial, and the blood expectorated is arterial in color. When streaks of blood appear in the sputa, the bleeding usually comes from the vessels of the alveolar walls.

Profuse hemorrhage in the later stages of phthisis have their origin in cavities in the lung substance. Hæmoptysis usually comes on with coughing. There is a sensation as if a fluid were trickling underneath the sternum, and there may be cardiac palpitation, oppressed breathing, and a peculiar sweetish and saltish taste in the mouth. For some time after the primary hemorrhage, blood is coughed up, and the color of the spitting becomes darker. Sometimes without warning there is sudden filling of the mouth with hot arterial blood. In advanced phthisis hemorrhage may be the immediate cause of death.

According to English writers, there may be a hemorrhagic phthisis. In this variety, an apparently healthy man has a sudden and profuse hemorrhage, recurring daily for some time, followed by cough and slight expectoration for a few days, with no physical signs of consolidation. These cases often continue for years without any other phthisical symptoms, but sooner or later phthisis is developed. Tubercular disease of the vascular walls is the primary and chief event in such cases. Hæmoptysis may occur in persons who do not have phthisis at the time, or who do not become phthisical afterwards. A pulmonary hemorrhage may be vicarious of the menstrual flow, and it may be determined by the sudden arrest of hemorrhoidal bleeding (Bartholow, Flint and Loomis).

Pain. Pain in the chest does not belong to the disease per se; but it is liable to occur at times more or less frequently during the first stage of the disease, and is due to circumscribed pleurisy. Sometimes the pain is sharp, lancinating, or stich-like, referred to the summit of the chest, and frequently shooting beneath the scapula. The pleurisy is of the dry form, and seldom causes severe pain, but rather a sense of tightness and constriction on taking a full inspiration. Intercostal neuralgia is frequent and may be confounded with the pain of a localized pleurisy. Pain on swallowing usually announces the co-existence of laryngeal phthisis.

Respirations. Are usually increased in frequency. It is apparent especially on exercise. The accelerated breathing is due to the fever, to the diminished breathing area, to bronchial obstruction, and to pain in the chest. Anæmia and heart-failure

may also cause it. During the whole course of fibroid phthisis, shortness of breath on exertion is a constant symptom.

Circulation.—During the first stage more or less acceleration of the pulse is the rule, and is an important diagnostic symptom. If the pulse be frequent the disease is likely to be rapidly progressive. In chronic phthisis the pulse is always feeble. It is accelerated by slight exciting causes. In the early stage of fibroid phthisis the pulse is rarely over 100. In the last stage of all varieties of phthisis the pulse becomes very rapid and feeble. The pulse is soft and compressible and the arterial tension low.

Fever. Rise in temperature is so constant a symptom of phthisis that it has led to the expression, "there is no consumption without fever." The fever course may be different in different cases. The usual type of fever in the beginning is the quotidian. There is a daily morning remission and an evening exacerbation terminating in a sweat, the so-called *hectic fever* (septicæmic fever). Hectic fever may occur in any stage of phthisis, but is usually confined to the stage of softening and excavation. It has three stages: first, a well-marked chill or chilly sensation, lasting for a half to one hour; second, the chill is followed by dryness and heat of the surface, the temperature rising from 102° to 104° F. The face assuming a peculiar brilliant appearance, and the cheeks having a peculiar rosy tint called the "hectic flush," and third, the sweating stage comes on sometime in the night. The night-sweats are usually profuse and exhausting and always indicate the existence of hectic fever. The chills and fever may be absent but the sweats are constant. Sometimes there is a marked sensation of burning in the soles and palms.

The type of fever may be double quotidian (two paroxysms of fever each day). In some cases the temperature in the morning may be subnormal, only reaching normal in the evening; in others the rise begins at 2 p. m., and continues until 8 p. m., and then falls until 5 in the morning. As cavities form, the afternoon rise occurs later, at 10 to 12 at night. Toward the end of the disease the fever type resembles that of pyæmia. A normal temperature denotes that the disease is *stationary* or *non-progressive*, and a steady and continuous high temperature

denotes that it is progressive. The *chills*, the *fever* and *perspiration* may occur with such regularity that the patient is supposed to have intermittent fever. In fibroid phthisis the temperature rarely rises more than a degree or two above the normal. In the absence of local symptoms, the thermometer alone may detect pulmonary phthisis in the aged (Bartholow, Flint and Loomis).

Emaciation.—Is an early and constant symptom of phthisis; but it is not always progressive. Fever is the chief cause of the wasting and pallor that are so common in all varieties of phthisis. The higher the average fever, the more rapid the emaciation. Wasting may occur before any local trouble of the lungs is detected. Emaciation may not be continuous in all cases; there are periods when the patient may even regain lost weight and muscular strength. The anorexia, dyspepsia, diarrhoea, profuse expectoration and hæmoptysis are all causes of the emaciation. The wasting occurs not only in the fat and muscle, but in the organs and blood as well. Slow, gradual wasting belongs to the history of fibroid phthisis (Loomis).

Disturbances in the Alimentary Tract.—In some cases there is almost entire *loss of appetite*, and even a repugnance to food. This is an unfavorable feature of the disease. Disorder of digestion is sometimes so prominent as to appear to be the chief malady. There may be nausea and vomiting, and pain in the stomach due to gastric catarrh. Diarrhoea may occur in the first stage. It may exist with, and without a tuberculous affection of the intestinal canal. Persisting or frequently recurring diarrhoea, accompanied by cough, be the latter never so slight, should excite suspicion of pulmonary phthisis. Tuberculosis of the intestines results from swallowing the expectoration. Tuberculous ulcerations are sometimes found in the large as well as in the small intestine. The ulcerations may lead to circumscribed peritonitis. Perforation of the intestine may take place. The ulceration may cause intestinal hemorrhage. Diarrhoea is a more prominent symptom in the second stage. It is usually most severe at night. If profuse, and watery, it is called *colliquative diarrhoea*. Colliquative diarrhoea occurs at an advanced period of the disease, although tuberculosis of the intestine does not

exist. There may be tympanites. Hemorrhoids and fistula in ano are frequent troublesome complications of phthisis, and should always be relieved by surgical interference in the early stages of the disease. The cure of a fistula in ano or the healing of an old ulcer is often followed by phthisical developments (Flint and Loomis).

Menstruation.—Arrest of menstruation is a very frequent occurrence in females who are consumptive. In young females this is sometimes the first noticeable symptom. In advanced phthisis, it indicates extreme exhaustion, and is often followed by a more rapid progress of the disease (Loomis).

Houseness. Or huskiness, and sometimes extinction of the voice denote laryngitis, which may be developed in the first as well as in the second stage. Its occurrence is presumptive proof of pulmonary phthisis, the latter, as a rule, existing prior to the laryngitis (Flint). The pharynx is sometimes the seat of tuberculous processes. A less constant symptom is the red line around the border of the gum. In some persons this gingival line is a mere streak; in others it is more than a line in breadth (Da-Costa).

Clubbed Fingers.—The end of the finger is somewhat clubbed. The nails are curved and become claw like, prominent in the centre, depressed at the sides, their surface slightly cracked, their appearance bluish. This peculiar appearance is characteristic of phthisis, but is not pathognomonic. A similar nail is seen in chronic pleurisy, and in diseases of the heart. Clubbed fingers are found in about twenty-five per cent. of the cases.

Skin.—Is pale and traversed by prominent blue lines. The hair becomes thin, dry, gray and falls out. (Edema of the feet and legs is a frequent symptom of the second stage, denoting notable failure of the circulation. At first it disappears on lying down, but at length it is permanent. Its occurrence indicates that a fatal issue is not far distant (Flint and Loomis).

Cerebral Symptoms.—Are rarely pronounced in any stage of phthisis. There is no chronic disease in which the mind is so clear. The feelings are usually cheerful and buoyant. Patients are hopeful respecting their condition, and are readily persuaded

that they are improving, and hence they fall an easy prey to quacks. They sometimes dislike to be told the truth, and take offense at an intimation that they are consumptive. The expectation of improvement, prolonged life, or even recovery, amounts in some cases to an insane delusion. Patients are sometimes occupied in forming plans for the future when it is obvious to an observer that they are on the verge of the grave (Flint and Loomis).

Physical Signs. 1. *Of the stage of consolidation:* *Inspection* reveals diminished expansion, on inspiration, in the supra- and infra-clavicular regions of the affected side. *Palpation* shows more distinctly the loss of expansion on the affected side, and increase of vocal fremitus over the consolidated lung. *Percussion* elicits relative dullness and sometimes even flatness. If the consolidation is slight, the percussion sound may remain normal. To recognize a slight consolidation at the apex of the lung, it is important to percuss from the trachea rather than toward it. In all cases percussion should be performed at the end of a full inspiration and at the end of a full expiration. *Auscultation* shows increase of vocal resonance. Over the affected portion, the respiratory sounds may be feeble or exaggerated, interrupted or wavy. In addition there are certain adventitious sounds or *rales*. The earliest of these audible is a *fine, dry, crackling sound* (sub-crepitant) appearing at the end of inspiration.

The *subcrepitant* rales heard within a circumscribed space at the summit of the chest on one side are highly significant of tubercle. They proceed from secondary circumscribed bronchitis. A *crepitant* rale, in like manner limited to a small space at the summit on one side, has the same significance, being due to secondary circumscribed pneumonitis. Crumpling and crackling sounds are significant, provided they be limited to the summit on one side. A pleural friction sound limited to the summit on one side denotes a secondary circumscribed pleuritis.

2. *Of the stage of softening and cavitation.*—*Inspection* shows a greater frequency of respiration and a more marked depression above and below the clavicle on the affected side, as well as increased difficulty in local expansion. In fibroid phthisis the retraction is more marked than in any other variety. *Palpation*

shows diminished expansion of the affected side, on forced inspiration. Vocal fremitus is increased. *Percussion* shows more uniform and widely spread dullness. *Auscultation* shows bronchial breathing, and bronchophony becomes more distinct. Numerous, moist, crackling rales are heard. When cavities form, *inspection* shows greater depression in the infra-clavicular region and less expansive movements. *Palpation* shows intensified vocal fremitus over large cavities containing air and communicating with a bronchus. *Percussion* gives a tympanitic resonance, and the varieties of this resonance, called "cracked-pot" and amphoric, denotes cavities. If the cavity is filled with liquid there will be dullness on percussion. *Auscultation*. Over small cavities, cavernous respiration will be heard. Over large cavities near the surface *amphoric* respiration will be heard. The incoming air may bubble up and cause gurgles (Loomis and Flint).

The Diagnostic Points Pertaining to Symptoms.—1. *Cough and expectoration*, not succeeding an attack of acute bronchitis, and not connected with chronic pharyngitis, the cough at first dry and expectoration small and transparent, and becoming gradually more abundant and opaque. 2. *Stitch-pains* at the summit, not connected with intercostal neuralgia. 3. *Chills* not referable to malaria. 4. *Hæmoptysis*. 5. *Accelerated breathing*. 6. *Loss of weight*. 7. *Pallor or anaemia* not otherwise explicable. 8. *Hoarseness*, or huskiness of the voice proceeding from chronic laryngitis. 9. *Chronic peritonitis* not traumatic. 10. *Suppression of the menses*. 11. *Buoyancy* of mind instead of despondency (Flint).

Differential Diagnosis.—The diagnosis of pulmonary phthisis rests mainly upon an examination of the sputum and upon physical signs. Incipient phthisis may be confounded with atonic dyspepsia. A cough may be present in atonic dyspepsia, the so-called stomach cough; but in this case there is no irritation about the air-passages. In advanced phthisis, hectic fever may be confounded with intermittent. In phthisis, the fever has been preceded by a period of cough, and loss of flesh and strength, whereas in intermittent, these symptoms have followed the access of fever. In phthisis there is *not* enlarged spleen and the *hectic* is *not* arrested by large doses of quinine. Laryngeal symptoms

are often so pronounced in the beginning as to obscure the pulmonary affection. When tubercular deposits occur in the larynx, the tone and quality of the voice are quickly affected, so that the larynx may seem to be the only seat of tubercular deposit. The coexistence of pulmonary disease ought to be suspected, because of the relation known to obtain between them.

Acute phthisis may be mistaken for croupous pneumonia, bronchiectasis and capillary bronchitis. In *pneumonia* the prolonged ushering in chill, the continuous high temperature, the characteristic sputum, the dullness limited to a lobe, and the pneumonic countenance, are symptoms which readily distinguish it from acute phthisis. *Bronchiectasis* accompanied by wasting, fetid expectoration, hæmoptysis, and night sweats with the physical signs of consolidation, may well be mistaken for the advanced stage of acute phthisis. But in phthisis the signs of consolidation precede those of cavities; in bronchiectasis they follow them. Fever and emaciation are always greater in phthisis than in bronchiectasis. In *capillary bronchitis* there is no dullness on percussion, subcrepitant rales are heard on both sides of the chest, and there is no bronchial character to the respirations. The early stage of *chronic phthisis* may be confounded with bronchitis, pulmonary infarction, pleurisy, acute lobar pneumonia, anemia with cough and expectoration and cancer of the lung. The evidence of consolidation of lung-tissue is essential to the diagnosis of phthisis. So long as bronchitis is accompanied by a temperature of 100° F., and the physical signs show that the bronchitis is general, phthisis is readily excluded; but if the temperature rises to 103° F., and localized crepitant rales develop at the apex of either lung, accompanied by dullness on percussion over the seat of the rales with a bronchial character to the respirations, then there is reason to believe that phthisis is being developed. The diagnosis between chronic bronchitis and fibrous phthisis rests upon the evidences of consolidation and retraction in phthisis, and their absence in bronchitis. *Pulmonary infarctions* are attended by hæmoptysis and localized areas of dullness. Heart disease is their chief cause. The blood expectorated in phthisis is of a bright scarlet color; in infarctions it is dark and in the form of coagula. Infarctions are most fre-

quently situated in the lower lobes; in phthisis the dullness is apical. In *pleurisy with effusion*, flatness will exist from the base of the lungs to the level of the fluid; the line of flatness will change with a change in the position of the patient. The cough is more hacking and is not accompanied by expectoration, and vocal fremitus is diminished or absent. A localized pleurisy at the apex of the lung, not the result of a general pleurisy, is indicative of tubercular development. *Anemia* with cough and expectoration is attended by no febrile symptoms, and by none of the physical evidences of pulmonary consolidation. In *cancer of the lung* there is usually bulging of the chest at the seat of the cancerous development; in phthisis there is retraction. In cancer the temperature is often subnormal; in phthisis it is more or less elevated. The currant-jelly expectoration of cancer is diagnostic. Pain is constant in cancer and intermittent in phthisis.

The difference between *caseous* and *tuberculous* phthisis is as follows: Tubercular phthisis is distinctly hereditary; caseous phthisis is not hereditary, but occurs in the scrofulous. Tubercular phthisis occurs at all ages; caseous from youth to middle age. Tubercular phthisis occurs insidiously with catarrh of the bronchi and larynx; caseous results from acute inflammations of the bronchi and lungs. In tubercular phthisis the lesions are apt to be on both sides; in caseous on one side. The laryngeal symptoms are much more common in tubercular than in caseous phthisis. *Fibroid phthisis* is distinguished from the other forms by its slow progress, by the long period of bronchial troubles before the pulmonary lesions begin and by the merely purulent expectoration (Bartholow, Flint and Loomis).

Prognosis.—The duration of phthisis is extremely variable. In the vast majority of cases it is essentially a chronic affection, but sometimes it runs a rapid course destroying life in a few weeks. The disease in such cases has been known as "galloping consumption," or phthisis florida, or acute phthisis. The prognosis of acute phthisis is always unfavorable. Its average duration is from five weeks to five months. Flint distributes fatal cases into groups as follows: "One group will consist of cases in which the disease continues from three to six months; in another

group death takes place between six months and a year; and in a third group the career extends from one to two years; and in another group the fatal termination is held in abeyance for many years." Flint says, "The generations of bacilli may die out or be destroyed, and the tuberculous products may be either absorbed or calcification may occur. Cavities may completely cicatrize. In these modes complete recovery may take place. Cavities may exist without any fresh products, giving but little inconvenience for an indefinite period, and even through a long life." Of 670 cases analyzed by Flint, 44 ended in recovery, and in 31 cases, the disease became non-progressive. He claims the establishment of the fact that in a certain proportion of cases phthisis is self limited. The most rational explanation of the manner in which this disease ends by self-limitation is to suppose that the conditions which are essential for the multiplication of the bacilli and which constitute the tuberculous predisposition or diathesis, after a time cease to exist. The vegetable parasite is destroyed because the soil becomes incapable of maintaining longer its existence. Persistent frequency of the pulse, fever, anorexia, and progressive emaciation oppose reliance on self-limitation. In proportion as phthisis is well tolerated there is room for hoping that it will prove self-limited.

Hæmoptysis is very rarely an immediate cause of death. The disease proves fatal generally by asthenia. Bartholow says, "Phthisis is the great enemy of the human race since nearly two-sevenths of the deaths from all causes are due to this disease." He also says, "Cures are now not uncommon."

Under *prognosis* Loomis says, "Chronic pulmonary phthisis is not necessarily a fatal disease. Its morbid processes may be arrested in the early stage or in the stage of cavities by proper treatment. Recovery has occurred in one-sixth of my recorded cases during the past ten years. The average duration of phthisis is three years and four months. Phthisis can in no sense be regarded as a self-limited disease. Some cases, after a period of activity, become stationary and then recover; others slowly but steadily progress to a fatal termination; others again pursue a more rapid and fatal course." The prognosis is unfavorable when there is a strong hereditary tendency, when phthisis de-

velops early in life, when scrofulous or glandular disease has existed in childhood, when the patient is narrow-chested, when the ordinary pulse rate is high, and when there is great variation in weight without any apparent cause. Frequent hæmoptysis in an early stage of the disease is not unfavorable. When œdema of the feet and lower extremities comes on in advanced phthisis, the prognosis is very unfavorable, and a fatal issue is not far off. Advanced cases may die suddenly from heart failure or syncope. The majority waste to a skeleton, but the mind is perfectly clear and the patient is hopeful of recovery, and makes plans for the future as if perfectly well (Bartholow, Flint and Loomis).

Treatment.—The two main objects of treatment are the destruction of the parasite and the removal of the tuberculous predisposition or diathesis. There are no known remedies which will accomplish either object.

I. Prophylactic Treatment. When a phthisical tendency exists, prophylaxis becomes highly important. It is possible to prevent the development of phthisis. Children born of phthisical parents should not be nourished in infancy by their own mothers, but should be placed with a healthy wet-nurse. During childhood they should be fed chiefly on good cow's milk, take systematic physical exercise in the open air, removed from the city to the country. They should not lead a sedentary life. They should not breathe air laden with foul vapors or fine particles of dust. Their sleeping apartments should be large and well ventilated. Sudden changes in temperature must be avoided, also hot, crowded apartments. Change of climate may be necessary. All those agencies which tend to develop pulmonary hyperæmia and bronchial catarrh should be avoided. Flannel should be worn next the skin the whole year. The diet should be simple and nutritious. Cold bathing should be practiced every morning to diminish the susceptibility to cold. The "milk-cure" and "grape-cure" will often be useful. All milk fed to children should be boiled, and they should not be allowed to come in contact with phthisical parents, except under guarded conditions.

II. Medicinal Treatment. *Alcohol.* Clinical experience shows that alcohol, in a certain proportion of cases, has a salu-

tary effect. If alcohol produces a sense of comfort, increases the strength, and does not excite the circulation or nervous system, benefit may be expected from its use; and vice-versa. As regards quantity, some patients will tolerate a large, some a moderate, and some only a small quantity. Phthisis is one of the diseases which in certain cases induce a remarkable tolerance of alcohol. Some patients are benefited by spirits, some by wine, and some by malt liquors, but in each case alcohol is the remedial principle. Bartholow says: "Small doses of alcohol after meals (half an ounce for adults) are highly useful to promote appetite and tissue formation. Large quantities of alcoholic fluids impair the function of digestion, and lessen tissue forming."

Cod-liver Oil.—The utility of cod-liver oil in incipient phthisis is very great. Its usefulness consists in the fact that it is a fat, having a special digestibility, owing to its containing bile elements. It is most useful in chronic tuberculosis and fibroid phthisis. It is better to give it with a little ether (*Mxx. 5j.*), because of the action of the ether in promoting the flow of pancreatic fluid. If cod-liver oil be taken without great repugnance, if it do not impair the appetite or digestion, or occasion derangement of the bowels, it may be expected to do good.

Loomis says, "It has been claimed that if cod-liver oil is commenced very early it has the power of arresting the phthisical processes. I doubt if it exerts any specific influence upon the disease. Unless the patient gains in weight while using the oil, it seldom or never proves remedial. A great gain in weight will sometimes immediately follow the administration of a small quantity of oil. It always acts remedially with more certainty in young persons and children than the aged. In some instances diarrhœa will be arrested by its use and also vomiting of food after eating. A teaspoonful once or twice a day is sufficient to commence with, the dose being gradually increased to a tablespoonful three times a day. Most patients take the oil best immediately or soon after meals." The pure oil is better than the emulsions and may be taken in whiskey or brandy to disguise its taste. The *lactophosphate of lime*, if well prepared, is a most valuable agent in the treatment of incipient and the more chronic

cases of phthisis. It may be given in a dose of a tea- to a dessertspoonful of the syrup three times a day after meals with cod-liver oil.

The *hypophosphites* are valuable agents to promote the constructive metamorphosis. *Arsenic* is deserving of special commendation, in incipient phthisis, to promote the appetite and favor tissue building, while it corrects the disordered state of the stomach mucous membrane. It must be given in small doses, two drops of Fowler's solution three times daily. The *iodide of iron* and cod-liver oil will control the tendency to catarrhal attacks. In tubercular and fibroid phthisis, among the earliest symptoms are stomach disorders, poor appetite, atonic or acid indigestion, and especially repugnance to fatty elements of food. The *mineral acids*, with a bitter, such as tincture of nux vomica, are especially serviceable. If there be acid eructations, pyrosis and heart-burn, the mineral acids, especially dilute nitric (ten to fifteen drops, well diluted t. i. d.) should be administered before meals; but if the condition be atonic indigestion, the acid should be given after meals. The nux vomica tincture should be given before meals—fifteen drops in water. *Quinine*.—In some cases of phthisis sulphate of quinine is one of the most reliable and satisfactory antipyretics. One tenth of a grain of morphine combined with the quinine increases its antipyretic powers (Loomis). Loomis also gives five grains of antifebrin two or three times in 24 hours to phthical patients whose temperature ranges much above the normal, and finds that their appetites are improved during its use, and nervousness lessened. In many cases, after the disease has passed the first stage, the fever cannot be controlled.

Cough.—If the cough is very distressing, gargling the throat with a solution of bromide of potassium, or applying a mixture of chloral and camphor by means of a camel's hair brush to the fauces, and the atomization of a solution of cocaine or of morphine, are temporarily beneficial. Fothergill's prescription of hydrobromic acid diluted and spirits of chloroform sometimes acts well. A combination of codeine, atropine and strychnine is highly efficient as a remedy for cough, for night-sweats and reflex vomiting. Picrotoxin allays the vomiting which accom-

panies the cough almost as efficiently as strychnine. The patient should try to suppress the cough. The irritable feeling in the fauces may be allayed by a bit of gum arabic, candy, or troche. The official troche of ipecac and opium, or of morphine and ipecac, may be used. Paregoric will often allay the cough. The inhalation of a few drops of chloroform will often control the cough. *Ammonium carbonate* in the infusion of wild cherry bark is one of the best stimulating expectorants, and it never nauseates. A solution of morphine in glycerine applied to the fauces with a brush, relieves the cough of phthisis. A better mixture is glycerine two parts, whiskey one part and crystalized sugar enough. This should be allowed to trickle slowly down the fauces.

Tannic acid (gr. xx. to 5iv. of aquæ) is good in chronic throat troubles. It may be used as a spray.

Night-sweats are a part of hectic. When quinine does not control them, quinine and opium may do so. Oxide of zinc (gr. ij-iv.) gallic or sulphuric acids, arseniate of iron (gr. $\frac{1}{4}$ to $\frac{1}{2}$), extract of belladonna, or sulphate of atropia hypodermically, picrotoxine, ergot, all may be tried at different times. Atropia is the most reliable. Sponging the body with hot water, or vinegar and water, is sometimes effective. Sponging with astringent waters (alum in alcohol) is sometimes efficacious.

Diarrhœa.—If the diarrhœa is dependent upon catarrh, with or without ulcerations in the small intestine, cod-liver oil and the hypophosphites of lime and soda will often be of service. Five grains of pancreatin given two hours after eating will often relieve the intestinal pain even in the later stages of the disease. Ten grains of bismuth, combined with a twelfth of a grain of morphine, after each movement, will almost certainly control the diarrhœa. If the diarrhœa depends upon ulceration of the large intestine, all that can be done is to give temporary relief by opium suppositories. When diarrhœa is persistent and accompanied by rapid emaciation, it is tubercular. For the diarrhœa, Bartholow gives two drops of Fowler's solution and ten drops of laudanum. *Vomiting* after meals is often a troublesome attendant of phthisis. Champagne with the food, hydrocyanic acid, and pepsin are useful, but the most certain relief is

obtained by giving the patient a glass of hot water every two hours, followed in half an hour by a teaspoonful of raw scraped beef made into a sandwich.

Creosote.—Bartholow thinks that from one to five minims of pure beech-wood creosote given three times daily, has distinct curative power in suitable cases of phthisis.

Hæmoptysis.—The most valuable remedies for the arrest of hæmoptysis are rest and opium. Lead, ergot and ice are recommended. Turpentine is more reliable than any remedy except opium. Local pains in the chest may be relieved by blisters, sinapisms, liniments or the belladonna plaster.

Antiseptic Treatment by Inhalation.—Bartholow says, "The value of antiseptics by the method of protracted inhalation is just being recognized. The method consists in charging the air of a suitable apartment with a volatile remedy which the patient can breathe for a half to one hour or longer. I advise the inhalation by the protracted method of ethyl iodide, carbolic acid, carbolic acid and tincture of iodine, iodol, iodoform, oxygen, etc. The method of germicide treatment by rectal injection of sulphuretted hydrogen, and carbonic acid, has fallen into disuse in this country. I hope I may not be considered egotistic and prejudiced when I say that this mode (atomization of solutions) of using the remedies is not good—is not effective."

Loomis says, "The antiseptic treatment of phthisis has not thus far given satisfactory results. Carbolyzed inhalations have been quite extensively employed with very favorable results according to some observers; but, after quite an extensive trial, my experience is decidedly against their use. The injection of cavities through the chest walls has not been followed by satisfactory results. I have found the hypodermic use of antiseptics to fail, not only in counteracting the sepsis, but in reducing the high temperature. I believe it is utterly futile to attempt to reach the bacilli imbedded in tubercular or caseous products." Again Bartholow says, "Cases of phthisis have been recently related as cured by the inhalation of highly heated air. If the air is deprived of its moisture the temperature at which it can be inhaled ranges from 150° F. to 300° F. This method is based on the power of heat to inhibit or destroy the bacilli. It is proba-

ble that this mode of treatment will develop into a highly successful one."

Hygienic Treatment of Phthisis.—Phthisical patients should sleep in large well-ventilated and well-lighted rooms with a southerly or westerly exposure. Flannels should be worn next the skin. Cold sponging or baths often act as tonics. The patient must live as much as possible in the open air, and should avoid sedentary occupations.

Diet.—The diet should be generous as regards quantity, quality and variety. The articles should be highly nutritious and adapted to the digestive powers. Phthisical patients should drink from one to three quarts of milk each day. Cream, butter and sugar should enter into the diet as largely as possible.

Change of Climate.—Bartholow says, "No change of climate can be beneficial, as a rule, after cavities have been formed, unless of slight extent. It is in incipient phthisis that a change of climate, dry, bracing and elevated, really exerts a curative influence." Loomis says, "It is well known that some consumptives thrive best in a warm, moist air, others in a cool, dry air; some are most vigorous in winter, others in midsummer. Each case must be carefully analyzed, before any definite directions can be given as to the climate best suited to it. We know of no climate which is entirely and absolutely antagonistic to its development. It was once thought that a warm, dry atmosphere alone was beneficial, but we now know that a cold climate not only does not hasten, but often arrests phthisical processes. The purity of the air is the chief reason that elevated regions are so beneficial in phthisis. Organic germs are more abundant in the air in the city than in the country. Rain and ozone free the air from them, the latter by oxidation. Rain cleanses the air of solid particles and purifies it by washing down ammonia and carbonic acid. The presence of ozone in the air is presumptive evidence of its purity. The air of high mountains and plateaux and along the shore of the ocean is richer in ozone than that of the plains.

The benefit which phthisical patients derive from living near pine forests has long been known. Turpentine exhaled from pine or hemlock forests converts oxygen into ozone, and thus the

air of pine forests becomes pure. Both sea and mountain air are cooler and less subject to frequent variations in temperature than the air of the plains. The question arises, will the patient be benefited by sea or by mountain air? Patients with exhausted nervous systems, with an overtaxed brain from excessive mental labor, or an all-absorbing business, and who still retain considerable muscular power should go to the mountains; while those past middle life, who have developed phthisis late, who are incapable of much muscular activity do best in sea air. The health resorts of this country are those of Colorado, Minnesota, Southern California, Georgia, South Carolina, North Carolina, the Rocky Mountain regions and New Mexico. Loomis obtained the best and most permanent results in Asheville, N. C., in New Mexico, and in the Adirondack region of New York state.

FIBROID PHTHISIS.

In typical cases the lung is shrunken in size, with a corresponding retraction of the chest-wall and often a lateral deviation of the spine. In the substance of the lung there are firm, dense bands and masses or nodules of fibroid tissue, frequently deeply pigmented. Tubercles with cheesy centres are also usually present. This variety of phthisis is comparatively rare (Flint).

Causes.—It is a disease of mature life, after the middle period, and is extremely rare before thirty (Bartholow). In the majority of cases the age of patients is under forty years (Flint). Next to heredity, chronic bronchitis and pleurisy are the most influential causes (Bartholow).

Symptoms. Fibroid phthisis is the most chronic form of the disease; its early history is that of bronchial catarrh, or of dry pleurisy; and it is not until after months, even years, that extension taking place to the lungs, the progress becomes more rapid. For months there is merely a dry cough, not very troublesome, but persistent. The expectoration is slight, and is nothing but mucus. The appetite is but little impaired, and the weight and strength are not materially reduced. The symptoms increase in severity during the fall, winter and spring months for two or three years; then fever comes on toward evening, the appetite

lessens, digestion becomes poor, the weight declines, the cough is harassing and prevents sleep, the expectoration becomes more profuse and entirely purulent; there is some difficulty of breathing, the pulse is small and weak, and finally slight chilliness is felt in the morning, fever in evening, and sweating occurs during the night. When the bronchi dilate, the expectoration becomes profuse, especially in the morning—a cupful or more may be brought up in an hour or two. The sputum usually contains tubercle bacilli. The matter expectorated is often notably fetid. The fingers often become clubbed (Bartholow and Flint).

Physical Signs.—As regards physical signs, they are the same in all forms of phthisis.

Differential Diagnosis.—Fibroid phthisis is distinguished from the other forms by its slow progress, by the long period of bronchial troubles before the pulmonary lesions begin, by the merely purulent expectoration, and by bronchial dilatation long before the cavities by excavation form. The initial period, terminating in a *bronchiectasis*, may occupy a number of years; at first for several years, there is winter cough only, the warm season being free or nearly so (Bartholow).

Prognosis.—The most chronic of all the forms of phthisis is the fibroid. The course of this disease may occupy several years, indeed, an ordinary lifetime, and prove fatal at last, as it involves lesions which do not admit of recovery (Bartholow).

Treatment.—Same as in the other forms.

ACUTE MILIARY TUBERCULOSIS.

Is characterized by the presence of miliary tubercles in most of the organs of the body. The organs almost constantly affected are the lungs, the liver, the spleen, the medulla of the bones, the kidneys, thyroid gland, the heart, the choroid coat of the eye, the lymph-glands and the serous membranes (Flint).

Causes. It is caused by the entrance of tubercle bacilli into the blood current, and their transportation to most parts of the body. All varieties of local tuberculosis may be followed by acute miliary tuberculosis. It frequently develops in persons

apparently in perfect health. All tubercles contain bacilli (Flint).

Symptoms.—Cases of this disease are rare; they occur mostly after puberty and before the middle period of life. The general symptoms denote a febrile disease. The disease sets in with a chill, a rather rapid rise in temperature from 103° to 107° F., with remissions and a rapid pulse 120 to 150, small, soft and compressible. The respirations are from fifty to sixty per minute. Cough is more or less prominent. There is complete anorexia and the prostration is great. The circulation in the extremities is feeble; the finger nails are blue, the lips and nose have also a cyanotic hue, and the countenance soon becomes dusky. The tongue becomes dry; sordes accumulate about the teeth; food is rejected; tympanites and diarrhoea supervene, the stools have a light yellow color; there is delirium of a low muttering character and stupor comes on which soon passes into coma. The cases, as a rule, present a striking analogy to typhoid (Bartholow and Flint).

Prognosis.—Is unfavorable. The duration of the disease is from a few days to six or seven weeks, with an average of three weeks (Loomis).

Treatment.—The consideration of the treatment of acute miliary tuberculosis is a rather barren subject, since it does not appear that any remedy has the least influence over the disease. The condition of the patient is hopeless, and all that the physician can do is to palliate symptoms and sustain the powers of life. This is one of the diseases in relation to which recovery is proof of an error in diagnosis (Bartholow and Flint).

PLEURISY.

Called also *pleuritis*, is an inflammation of the pleural membrane. It may run an acute, sub-acute, or chronic course, and have for its products fibrin, serum and fibrin, serum, fibrin and pus, or new connective tissue. It may be *primary* or *secondary* to some other disease (Loomis).

Pathological Anatomy. -Normally the pleural membrane is smooth, polished and covered with a single layer of endothelial cells. The pleural cavities contain normally a small quantity of serum. The first noticeable change in *pleurisy* or *pleuritis* is redness of the pleura from active hyperæmia of the vessels. Small extravasations of blood may take place on account of the blood pressure. The pleura loses its glistening appearance, and becomes dull, opaque and rough; the endothelial cells are rapidly cast off. Very soon the surface of the pleura becomes covered with a fibrinous exudation and it becomes rough and shaggy in appearance.

The opposing surfaces of the pleura may be agglutinated by the fibrin. If any serum exudes it gravitates to the most dependent portion of the pleural sac. Those are examples of *dry pleurisy*, in which a very plastic exudation is thrown out on the two surfaces over a small extent of the membrane, union taking place, there being no other effusion. More commonly, the pleurisy is of the *sero-fibrinous variety*. In this variety, in addition to the fibrinous coating of the pleura, the cavity contains serum, varying in quantity from a few ounces to several pints. When pus-cells accumulate in sufficient number, the exudation becomes purulent and the disease is called *suppurative pleurisy* or *empyema* (see empyema). The red blood corpuscles may be so abundant as to stain the fluid red; it is then called *hemorrhagic pleurisy*. In from four to six days after the onset of the inflammation newly formed capillaries, which are off-shoots from the pleural capillaries, make their appearance in the deeper parts of the layer of fibrin and cells covering the pleura. The terminations of acute pleurisy are either in death, in resolution, in chronic pleurisy, or in empyema. It will be noted that after the most favorable termination of pleurisy the pleura does not return to its normal state, but is left with a new growth of connective tissue which binds the pleural surfaces together over a greater or less extent. In this way the pleural cavity may become entirely obliterated by adhesions. The adhesions are at first weak, and may be broken by active exercise or by acts of coughing. Chronic pleurisy differs only in time and extent from the acute form. In *pleurisy deformans* the exudations are of

great thickness and extent, and by adhesion and subsequent contraction, extensive deformity of the lung may result. Pleurisy may be general or circumscribed (Bartholow, Flint and Loomis).

Causes.—Pleurisy may be primary or secondary. Exposure to wet and cold has been regarded as one of the most frequent causes of primary pleurisy. It may result from a penetrating wound, or blows upon the chest wall, or fracture of the ribs. It is common in early life up to the middle period, but is uncommon in old age. It is secondary to lobar and lobular pneumonia, pulmonary tuberculosis, infarctions, abscesses and gangrene of the lung, bronchitis, pericarditis, etc. Pleurisy is a frequent complication of many infectious diseases, such as scarlatina, variola, pyemia, septicemia, acute rheumatism, Bright's disease, scorbutus and gout. Pus is usually formed in the pleurisies of children (Bartholow, Flint and Loomis).

Symptoms. Acute pleurisy may be mild or severe. There are three stages. The first stage is the period from the attack to the time when effusion takes place. The second stage will extend to the time when the liquid begins to diminish. The third stage is the time occupied in absorption of the liquid. The first stage rarely extends beyond twenty four hours; the second and third stage are variable. Acute pleurisy with effusion, the ordinary form, sets in as any other acute inflammation, with chill, general malaise, and fever with pain in the side. There may be a well-pronounced *chill*, but more often chilly sensations for the first few days. The *pain* is usually acute, lancinating, circumscribed, and is increased by breathing, coughing, or abrupt movements of the body. It is felt at the side of the chest, sometimes at the base of the thorax, occasionally in the lumbar and iliac junction. It may be covered with a finger or two. It is commonly called "stitch in the side." The pain may be diffused and ill-defined. It may cease in three or four days, or continue. The *respiration* is hurried and difficult. The *fever* may continue with little variation for about eight days. The temperature in ordinary cases rarely rises above 100° F.; but in very severe cases it may reach 104° F.

Cough is usually present, but is sometimes wanting. It is usually suppressed on account of pain. It is a dry, short, tear-

ing, hacking cough. When effusion comes on, the cough declines. The *expectoration* is slight or wanting, and when present it consists only of a little frothy mucus. The *decubitus* of the patient is highly characteristic. Before effusion has taken place the patient lies on the sound side; but when the effusion begins to compress the lung the patient lies on the diseased side. If a considerable amount of liquid be rapidly effused the respirations are rapid; the patient suffers from a painful sense of the want of air or dyspnoea, and may be obliged to maintain the sitting posture. The *pulse* is accelerated, beating from 90 to 120 per minute. The *countenance* has an expression of weariness, anxiety and exhaustion and may be pale or cyanosed. It is a unilateral disease—that is, it affects the pleura of one side only (Bartholow, Flint and Loomis).

Physical Signs. During the first 24 hours of acute pleurisy, *inspection* shows restrained movements on the affected side, *palpation*, *percussion*, and *measurement* will give negative results. On *auscultation* the respiratory murmur will be found feeble over the affected side, and a grazing *friction sound* will be heard. As the plastic exudation takes place *inspection* will show a greater loss of expansive motion on the affected side; *palpation* shows diminished vocal fremitus; *percussion* gives slight dullness; *auscultation* shows feeble respiratory murmur, and a friction murmur will be heard on inspiration and expiration. If the pleurisy is confined to the pleura of the diaphragm or mediastinum the friction sound will not be heard. When there is considerable effusion, *inspection* will show more restricted movements; *palpation* shows absence of vocal fremitus at the bottom of the pleural cavity, (on the sound side the vocal fremitus is exaggerated); on *percussion*, dullness or flatness is found at the base of the chest, and the finger which serves as a pleximeter, feels an increased sense of resistance. Changing the position of the patient changes the line of dullness. The resonance over the lung above the level of the liquid is increased, constituting vesiculo-tympanitic resonance. On *auscultation* the respiratory sound will be absent below the level of the fluid, and feeble above it. (In health the vocal fremitus is greater on the right side). When the pleural cavity is completely filled with fluid,

inspection will show an enlargement of the affected side, and a bulging of the intercostal spaces. On the sound side the respiratory movements are increased. If the effusion is in the left pleural cavity, the heart will be displaced to the right, and the apex-beat may be noticed under the right nipple; if it occupies the right pleural cavity the apex-beat will be carried to the left, beyond its normal position. The circumference of the affected side at the end of expiration, will be one or two inches greater than that of the healthy side; but at the end of inspiration the difference will be but slight. *Palpation* shows absent vocal fremitus, or in rare cases vocal fremitus may persist and even be increased. *Percussion* shows flatness. *Auscultation* shows entire absence of the respiratory sounds, and vocal sounds will be distant and indistinct. At the upper portion of the pleural cavity bronchial respiration and bronchial voice, or bronchophony will be heard. As the fluid is absorbed the friction murmur returns, and is sometimes so loud as to be heard by the patient himself (Bartholow, Flint and Loomis).

Differential Diagnosis.—Pleurisy may be confounded with pneumonia, intercostal neuralgia and pleurodynia. Pleurisy begins by chilliness, which persists for several days—pneumonia by a severe rigor, rarely two; the pain in pleurisy is a stitch, a lancinating pain, which can be covered by the finger, pneumonia by a sense of soreness and pain much more diffused; the fever in pleurisy is continuous—in pneumonia there is a distinct crisis or lysis, somewhere from the fifth to eleventh day; the duration of pleurisy is indefinite—of pneumonia self-limited; the expectoration of pleurisy is simply frothy mucus—of pneumonia rusty or bloody; in pleurisy the vocal fremitus is absent—in pneumonia it is not only present but exaggerated; in pleurisy there is a friction sound, no crepitant rale, and the bronchophony is not so well defined—in pneumonia there is no friction sound, the crepitant rale is present, and bronchophony is loud and clear; in pleurisy with effusion there is more decided dullness, the intercostal spaces are pushed out, and the thorax enlarged; in pneumonia the percussion note is not so flat, the intercostal spaces and the size of the thorax remain normal. *Intercostal neuralgia* denotes a neuralgic affection of the intercostal nerves. The term

pleurodynia is applied to a painful affection of the muscles of the thorax. Both affections may be characterized by pain resembling that of either acute pneumonia or pleurisy; that is, a lancinating pain felt especially in the act of inspiration. They may be accompanied by a dry cough which is acutely painful. In cases of *pleurodynia* there may be pyrexia, and this may accidentally exist in cases of intercostal neuralgia. But intercostal neuralgia, as a rule, is not accompanied by pyrexia, and has three isolated points of tenderness, namely, behind, near the dorsal vertebrae; laterally in one, two or three intercostal spaces; and anteriorly, in one or more intercostal spaces near the sternum or over the epigastrium. In pleurisy there are signs denoting effusion and a friction murmur. Pain in *pleurodynia* and intercostal neuralgia is more marked, as a rule, in movements of the body than in the respiratory movements, the reverse being true of the pain of pleurisy and pneumonia. Persons affected with intercostal neuralgia are frequently anæmic, and sometimes tubercular (Bartholow and Flint).

Prognosis.—The tendency is to recover.

Treatment. In the first stage, the patient should receive a full dose of quinine (gr. xx.) and morphine (gr. ss.) for an adult, and the effect of this kept up by five grain doses of quinine combined with gr. $\frac{1}{4}$ of morphine every four hours. Besides the power of morphine to relieve pain, it is an effective remedy in serous inflammation. By relieving pain opium diminishes the determination of blood to the inflamed part; for pain is alone sufficient to occasion an increased afflux of blood to a part. Opium places the system in a condition to tolerate better the local affection. Aconite is a valuable sedative remedy in the early stage of this, as of other acute inflammations. It should be given in drop doses of the tincture every fifteen minutes for two hours, and then hourly. Saline purgatives should be given. When the exudation is poured out, carbonate of ammonia in a solution of the acetate (gr. v. x. in \mathfrak{z} ss.) should be given. They should take the place of the quinine and morphine. Saline laxatives must be given, and once a day gr. $\frac{1}{4}$ of pilocarpine may be administered to keep the skin active.

Diuretics are sometimes effective in removing the effusion. Half an ounce of the infusion of digitalis, freshly made from English leaves, given three or four times a day, with the bitartrate or acetate of potassium, is highly effective. The quantity of fluid ingested should be as small as possible. According to Loomis, if the patient presents the signs of anæmia, the syrup of the iodide of iron should be given in teaspoonful doses three or four times each day. Loomis says: "The remedial agent which seems to me to have the greatest power in promoting the absorption of an effusion is the syrup of the iodide of iron." The diet should be nutritious, tonic remedies are useful, and a little wine or spirit may be allowed.

Going out of doors and gentle exercise are to be encouraged. Counter irritation may do good. Cod-liver oil and extract of malt may be given, and the digestion stimulated by bitters and mineral acids. When a large effusion exists, especially if purulent, it becomes necessary to remove it by the operation of thoracentesis (see empyema). As death has occurred several times very unexpectedly after the operation of thoracentesis certain precautions are necessary. When the effusion is large, the whole amount should not be withdrawn at once (Bartholow, Flint and Loomis).

PRESCRIPTIONS FOR PLEURISY.

- R Morphine sulphatis gr. ʒ.
- Quinine sulphatis.....gr. xv.-xx.—M.
- Ft pulv. no. 1.
- Sig.: Take at once. (To abort a beginning pleurisy).
—Bartholow.
- R Tinct. opii deodoratæ.....5vj.
- Tinct. aconiti radialis ʒij —M.
- Sig.: Eight drops in water every hour. (In acute pleurisy before effusion).
—Bartholow.
- R Tinct. iodini comp..... ʒiij.
- Sig.: Divide the affected surface into three sections and paint one section every day. (For chronic pleurisy with effusion).
—Bartholow.
- R Potassii iodidi..... ʒiv.
- Aqua ʒvj. —M.
- Sig.: Take one teaspoonful in milk three times a day.

PNEUMONIA.

Is an inflammation of the pulmonary substance or parenchyma. *Pneumonia* is the name commonly used, but *pneumonitis* is the more appropriate term. The parenchyma of the lungs is composed of pulmonary lobules which are composed of air cells, infundibula, alveolar passages and bronchioles. A bronchus after it enters a lobule is called a lobular bronchus or bronchiole. It divides dichotomously once or twice, and terminates in the alveolar passages, into which open the air cells, air vesicles or alveoli. The alveolar passages also divide a few times, and end in funnel shaped spaces called infundibula, the walls of which are composed of thickly placed air vesicles. Pneumonia is known in common language as "lung fever," "winter fever," etc. (Flint).

Varieties.—*I. Acute lobar pneumonia* called by German writers *croupous pneumonia*, by French writers *fibrinous pneumonitis*, and by others *pneumonic fever*. *II. Lobular, catarrhal or broncho-pneumonia* and *III. Embolic pneumonia, suppurative pneumonia or abscess of the lung* (Flint).

Acute lobar or croupous or fibrinous pneumonia or pneumonitis is an acute general disease characterized by an inflammation of the vesicular structure of the lungs, with an exudation into the alveoli which renders them impermeable to air. A single lobe, the whole of a lung or both lungs may be simultaneously involved (Loomis).

Morbid Anatomy.—Lobar pneumonia may be divided into three stages. 1. A stage of congestion or engorgement, or hyperemia. 2. A stage of consolidation or *red hepatization*. 3. A stage of *gray hepatization*. Another division is into the stage of congestion; the stage of exudation (red hepatization); the stage of resolution (degeneration and extrusion of the exudation); and the stage of purulent transformation (gray hepatization).

In the *stage of congestion*, there are an increased blood supply and the pouring out of an exudation. The lung does not collapse when the thoracic cavity is opened, has a reddish-brown appearance, is heavier, floats in water, but sinks lower than the

normal lung, crepitates but little when pressed, and is no longer elastic. On section a thin, frothy, blood-stained serum exudes. It may be tenacious.

In the *stage of exudation* or red hepatization, there is a pouring out and coagulation of the exudation. There is exuded into the alveoli and bronchioles an albuminous or fibrinous fluid of great viscosity, and with it leucocytes which have wandered from the vessels, and red-blood-corpuscles present by diapedesis, and blood by the rupture of distended capillaries. In the capillaries of the inflamed area the blood current is finally stopped. The albuminous or fluid exudation remains fluid for a short time, and then solidifies or coagulates. When this process is completed, the inflamed part is solid, entirely without air, and falls immediately to the bottom when placed in a vessel of water. The volume of the affected lung is increased; so much so that it often bears the impress of the ribs. The lung is friable, easily torn and non-crepitant. On section a dirty red viscid fluid oozes from the surface. The cut surface has a reddish color, and is granular, resembling liver-tissue. This granular appearance is due to the little masses of coagulated exudation filling the cavity of the alveoli. The granules can be lifted out of the mold in which they are formed by means of a fine needle. There are two directions which the inflammatory process may now assume: toward resolution, or toward purulent transformation. When resolution takes place, the albuminous material which had solidified undergoes liquefaction, the watery parts being absorbed and the solid expectorated.

When the *purulent transformation* takes place, there is a change in the density and color of the affected lung. The pus-cells become numerous. The consistency becomes less and less until the tissue is a mere pulp, readily breaking down on pressure. On section the surface presents a uniformly dirty gray appearance. On slight pressure a reddish gray or dirty white puriform fluid flows from the cut surface. The granular look of the second stage has disappeared.

Termination.—Lobar pneumonia may terminate in: 1. Resolution. 2. Suppuration. 3. Abscess. 4. Gangrene. 5. Chronic pneumonia.

Abscess may follow suppuration. These abscesses vary in size from that of a pea to one which may occupy an entire lobe. They may open into the pleural cavity. *Gangrene* occurs in about two per cent. of all cases. It is liable to occur when there is great constitutional weakness, and in chronic alcoholism or in septicemia. In childhood, except before the second year, croupous pneumonia is rare. Double pneumonia is more frequent than in adult life. In old age, the pneumonic process usually begins in the upper lobes. Gangrene is far more frequently a termination of lobar pneumonia in old age than at any other period. It is a law of the disease that lobar pneumonia attacks the lower lobe of the right lung most frequently; the next most frequent seat is the lower lobe of the left lung; then the upper lobe of the right, the middle lobe of this lung being least frequently involved. According to statistics of Juergensen the right lung was affected in 53.7 per cent., the left lung in 38.23 per cent., both lungs in 8.07 per cent. According to Bartholow, the inferior lobe of the right lung is the point of election, being the seat of the inflammation in three-fourths of the cases. According to the analysis of 121 cases by Dr. Flint, in 29 cases it was limited to the lower lobe of the right, and in 25 cases to the lower lobe of the left lung. It extended over the whole of the right lung in 27, and over the whole of the left lung in nine cases. It was limited to the upper lobe of the right lung in eight, and to the upper lobe of the left lung in three cases. It was seated in the lower lobe of both lungs in eight cases.

The name "*crossed pneumonia*" has been applied to the disease when the lower lobe of one lung and the upper lobe of the opposite lung are affected. *Double pneumonia* occurs in from 5 to 15 per cent. of cases, and is more frequent in senile than in the adult period of life. According to Loomis the stage of congestion lasts from one to three days; red hepatization from three to seven days; and gray hepatization from two to thirteen days. In old age the stages merge rapidly into each other; abscess of the lung may occur within 36 or 48 hours after the onset. Over a pneumonic lung there is usually a circumscribed pleurisy. In a strict sense, nearly every case of pneumonia is a pleuro-pneumonia (Bartholow, Flint and Loomis).

Causes. Among the predisposing causes age ranks first. There are three periods in life in which the liability to pneumonia is greatest: early childhood; 20 to 40; and after 60. From reliable data it appears that lobar pneumonia is five times more frequent in the first two years of life than in the whole succeeding eighteen. Nine-tenths of all deaths after the sixty-fifth year are caused by lobar pneumonia. The disease occurs much oftener among males than females. In-door life, a vitiated atmosphere, excesses, especially alcoholic, and bad hygienic influences of every kind which induce debility favor attacks of pneumonia. Frequently the attack is excited by some unusual exposure, such as working in the cold and wet or sleeping out of doors at night. Diphtheria, measles, erysipelas, small-pox, and other acute infectious diseases must be regarded as predisposing causes. One attack of pneumonia predisposes to others; twenty-eight attacks have been noted in one individual. Pneumonia may follow a severe blow or injury to the chest or shock from any traumatic cause. In the aged, lobar pneumonia has developed as soon as four hours after fracture in the hip joint. Those parts of the year characterized by humidity, high winds and low temperature invite the disease. In this country it prevails most in winter and spring. Pneumonia is unknown in the Polar regions. North and east winds favor its development.

Loomis gives the following facts which tend to prove that lobar pneumonia is not a local malady: "Cold does not influence the prevalence of pneumonia as it would were it a local disease (e. g. bronchitis). Wet and cold increase a bronchitis but not a pneumonia rate. Lobar pneumonia is more prevalent in our Southern than in our Northern states, affecting especially the negro population, and often proves the scourge of cotton and sugar plantations. The prevalence of pneumonia increases from pole to equator. All acute general diseases increase with the population, pneumonia does this. Statistics show pneumonia to be more frequent in New York City now than twenty years ago. Again, there is no relation between the amount of lung involved and the intensity of the symptoms. In local inflammations the reverse of this is true. No second chill occurs when another lobe is attacked. The absence of a known period of in-

cubation, of a typical temperature range, and of characteristic surface phenomena, and the fact that the disease is not contagious are the reasons advanced by those who regard it as a local, not a general disease.

The resemblances of pneumonia to acute general diseases are: distinct chill, an orderly pyrexia, a rather typical course, i. e. a day of abrupt crisis, a definite duration, and the symptoms following in regular sequence. There is a peculiar facies; an occasional herpetic eruption; nephritis is not rare; the cerebral symptoms resemble those of the exanthemata; there are sweats and sudamina; and its mode of commencement. Coma in the old and convulsions in the young indicate that it is an acute general disease. We have abortive cases of pneumonia, just as we have abortive cases of typhoid. Pneumonia is allied to acute general diseases by the fact that certain complications occur. It is sometimes a disease of intra-uterine life. No local disease occurs in the fetus. The success of modern methods of treatment based on this belief bears evidence to its being a general, self-limiting, acute febrile disease. Pneumonia is thus admitted to be a general constitutional disease with local manifestations. It seems probable that the real exciting cause is a *microbe* (Bartholow, Flint and Loomis).

Symptoms. *I. Subjective Symptoms.*—For a day or longer there may be malaise, anorexia, headache, dull pains in the limbs, back and lumbar region, vertigo, epistaxis, slight diarrhoea or jaundice, and flashes of heat and rigors. In most cases the invasion is sudden, and the disease is ushered in by a *distinct chill*. Generally the patient is seized with a chill in the night. This chill is intense and prolonged, more so than in any other disease except pyæmia and malarial fever. It lasts from one-half to three hours. Its abruptness and violence are characteristic. A distinct chill is less frequent in the pneumonia of old age; yet when an old person has a marked chill pneumonia may always be suspected. The *initial chill* is rarely repeated. A child may awake in the night with a burning skin, bounding pulse, flushed face and hacking cough as the first symptoms. With the initial symptoms there are rise in temperature, pain in side, accelerated breathing, dyspnoea, cough, expectoration, flushed and anxious

countenance, headache, loss of appetite, intense thirst, scanty urine, and heavily-coated tongue. The symptoms increase until the day of crisis, when they either suddenly remit and the patient breaks out in a profuse sweat, or they subside by lysis. The defervescence is usually reached between the fifth and ninth day.

II. Objective Symptoms.—1. *Respiration* is more constantly increased in frequency in pneumonia than in any other acute disease, and varies from 30 to 80 per minute. The respirations may be 80 per minute and the pulse rate not more than 100. The acceleration is not in proportion to the amount of lung involved. It is *panting*, not catching in character. It may or may not be accompanied by dyspnœa. Expansion of the nostrils is an early symptom in the pneumonia of children.

2. *Dyspnœa* is by no means constant. It does not depend upon the amount of lung involved. It is often so great that the patient is unable to lie down. The greatest dyspnœa occurs where there is marked nervous prostration, and in complicated pneumonia. In children dyspnœa is most marked when the apex of the lung is involved.

3. *Pain* follows the chill. It is situated under the nipple of the affected side. It is sharp and stabbing, often located over the pneumonic spot, and is intensified by coughing, sneezing, and deep inspirations. It is the pleurisy that causes the pain. Pneumonia itself is a painless disease. Pain in the affected side rarely continues beyond the third or fourth day. If it continue beyond the eighth day it is evidence of pleuro-pneumonia. It is present in 85 per cent. of all cases. *In old age pain is never severe.*

4. *Cough* is present in over 90 per cent. of the cases. It comes on within 24 hours after the advent of the disease. At first it is short and "hacking" in character. Old people with pneumonia often have no cough.

5. *Expectoration* is characteristic. In the first 48 hours of the disease it is simply frothy mucus. Then it becomes semi-transparent, viscid, gelatinous and tenacious, but *never* opaque. So tenacious is it that the cup containing it may be inverted without spilling the mass. This tenacity in great part causes the difficulty of expectoration. Its color varies. About the

second day the "brick-dust" or "rusty" sputa may be observed. This color is due to the presence of blood. The sputa may be creamy and yellow, or of a very dark or prune juice color; the latter occurs especially in alcoholic subjects. Greenish sputa may occur in the middle of the disease and during resolution. When resolution occurs the sputum becomes abundant, and of a yellow creamy color. There may be no sputum throughout; or it may not appear until the sixth or even the twelfth day. The sputum may remain brick dust till the ninth or tenth day. In children sputa are usually absent. In *senile pneumonia* expectoration is never an early symptom. The sputa are rusty in about 33 per cent. only of such cases; frothy or catarrhal sputa are the rule. A chocolate-looking serous sputum, appearing soon after the onset of pneumonia, shows a depraved condition and indicates "typhoid pneumonia."

6. *Temperature-range* of a typical case of lobar pneumonia indicates that it belongs to a remittent or sub-remittent type. The temperature rises suddenly during the initial chill, and in two or three hours after it may range from 102° to 105° F. After the first twenty-four hours the temperature is subject to morning and evening exacerbations and remissions. It is usually highest on the evening of the third day. A sudden rise of temperature may indicate a complication. The sudden fall of temperature on the fifth or sixth day indicates a *crisis*, and the beginning of convalescence. The fever may reach its highest point just before the *crisis*. Pneumonia is one of the few diseases terminating by *crisis*. When the temperature declines gradually ("lysis"), a normal point is usually reached by the ninth day, sometimes not until the twelfth or fourteenth. A continuously high temperature after the tenth day indicates purulent infiltration. Pneumonia at the apex has the highest temperature range. The *fifth* and *seventh* are the days of crisis in the majority of uncomplicated cases. Of 867 cases, 677 ended before the eighth day.

7. *Pulse* varies with the severity, extent and stage of the pneumonia. In mild cases it ranges from 90 to 120; if it continue above 120 the case is severe. The pulse is soft and full at the onset. Later it becomes small and feeble. It is not the most

extensive pneumonia that is accompanied by the greatest flagging of the heart. *Heart failure* may exist before, or just as hepatization is commencing. When the heart is failing the pulse shows that the artery is unequally filled by each beat. In children the pulse rate may be 200 per minute.

8. *The skin* is often hot and dry until the crisis, but it may be bathed in perspiration from the onset. When the parched skin becomes moist at the acme of the disease and the patient is not relieved, it is an unfavorable symptom.

9. *Countenance*.—In most cases the expression of the countenance is characteristic. The face is anxious, and over the malar bones is a mahogany flush, not diffused as in typhus fever, but well defined and circumscribed. It is called the “pneumonic spot.” The rest of the face is pale. Usually one cheek is more flushed than the other; this is due to disturbance of the vasomotor system. The lips may be cyanosed, but at the crisis they become pale.

10. *Herpetic eruption* upon the cheeks, nose, lips or eyelids occurs in about fifty per cent. of cases. It is rare before the second or third day and may not occur until the crisis.

Sudamina may accompany profuse sweating. In children while the surface of the body is hot and dry, the extremities are cool and the pneumonic flush is bluish. Cyanosis of the extremities is more frequent than in adults, and *herpes labialis* is more constant. In old age the pneumonic flush is often the first objective sign of pneumonia. The eye-lids alone are cyanotic. The face assumes a sallow hue and the surface heat is succeeded by a cold, clammy perspiration.

11. *Cerebral symptoms* are headache, slight delirium at night (it may be active), coma and convulsions in children.

12. *Digestive symptoms* may be nausea and vomiting, anorexia and thirst. The tongue and lips may become brown, dry and cracked, and sordes collect on the teeth. The urine in pneumonia is scanty and high colored. Epistaxis is most frequent at the onset and at the crisis. Swelling of the veins of the hands in children is an unfavorable symptom. When pneumonia is to terminate fatally, dyspnoea increases, the patient “sinks,” the pulse becomes small, rapid and intermittent, moist rales are

heard in the bronchi, the face is livid and the body is bathed in a profuse cold, clammy sweat.

Abscess.—Acute pneumonia terminates in abscess in two per cent. of all cases. In these cases, the sputa are copious and fetid, yellowish in color, and consisting almost wholly of pus. The fever is of the hectic type, and is accompanied by rigors and sweats. *Gangrene*, as a termination of pneumonia, has been found in about 14 per cent. of cases. In these cases there is sudden collapse, rapid, feeble, intermittent pulse, face pale and death-like, and profuse expectoration of blackish-green masses. The breath is offensive and the body has a cadaverous smell. The sickening odor of pulmonary gangrene is most perceptible after coughing. Gangrene has its seat in the lower lobes of the lung.

Purulent infiltration may be suspected when resolution does not take place at the period of crisis and the temperature remains high, accompanied by symptoms of prostration and profuse purulent expectoration. Death results from exhaustion.

Typhoid pneumonia is a term that has been applied to a pneumonia attended by typhoid symptoms. There is no sputa, no dyspnoea, no pain, no cough. Sordes collect on the teeth and gums. The tongue is thickly coated, and later covered with thick black crusts. There is stupor, somnolence and continual low, muttering delirium. This form is common in the aged. *Bilious, or gastric pneumonia*, is lobar pneumonia occurring in malarial districts, accompanied by gastro-enteritis with hepatic symptoms.

Physical Signs.—*I. First Stage, or Stage of Congestion.*—*Inspection* shows diminished respiratory movements on the affected side. *Palpation* shows increased vocal fremitus over the affected lung. *Percussion* shows slight dullness. *Auscultation* shows a feeble vesicular murmur. There is broncho-vesicular breathing. Within 24 to 36 hours there is heard with or at the end of inspiration a fine crackling sound over the inflamed region—the crepitant rale. This *rale* is highly diagnostic of pneumonia. It has been compared to the sound produced by rubbing a lock of hair between the fingers in front of the ear, and to the burning of grains of salt on live coals. As the sound is produced by the separation of the bronchioles and alveoli, adherent by the

viscidly of the albuminous exudation, it is obvious that it can occur only during inspiration. When consolidation takes place, the crepitant rale ceases.

II. Second, or Stage of Red Hepatization.—*Inspection* shows lost respiratory movements of the affected side, and increased on the sound side. *Palpation* shows increased vocal fremitus. *Percussion* gives complete dullness. *Auscultation* gives bronchial respiration and bronchophony is heard over the whole of the consolidated lung. If the pleural cavity be partly filled with fluid, the voice sounds may be ægophonic at the level of the fluid. Pectoriloquy may be heard (i. e., when the voice sounds directly into the ear from the chest).

III. Third, or Stage of Gray Hepatization.—*Inspection* shows returning respiratory movements. *Palpation* shows vocal fremitus gradually diminishing. *Percussion* shows diminishing dullness. *Auscultation* shows broncho-vesicular breathing, and rale redux (i. e., resolving subcrepitant rale).

Differential Diagnosis. Pneumonia may be confounded with pulmonary congestion and œdema, capillary bronchitis, pleurisy, hypostatic congestion, catarrhal pneumonia, pulmonary infarction, meningitis and typhoid fever.

Pneumonia commences with a chill, followed by a rapid rise in temperature and pain in the side. There is no chill, no fever, and no pain in pulmonary congestion and œdema. The expectoration of pneumonia is viscid and rusty; in pulmonary congestion and œdema, it is profuse, watery and blood-stained. As a rule, pneumonia is unilateral; pulmonary œdema is bilateral. In *capillary bronchitis* there is heard all over the chest the subcrepitant rale, the expectoration is muco-purulent, the temperature range is low, there is no dullness on percussion, no bronchial breathing, and cyanosis is marked. The breathing is labored in bronchitis, and panting in pneumonia. *Acute pleurisy* begins with chilliness, or several rigors, and low temperature; pneumonia with a distinct chill followed by fever. In pleurisy the face is pale and anxious, and the pulse is firm, small, tense, and wiry; in pneumonia the face has a mahogany flush, and the pulse is full and compressible. The breathing in pleurisy is *catching*; in pneumonia it is *panting*. In pleurisy there is a dry, hacking

cough with mucous expectoration; in pneumonia rusty sputum. In pleurisy with effusion, vocal fremitus is diminished, there is flatness on percussion, the respiratory sounds are feeble, and there is friction sound; in pneumonia vocal fremitus is increased, dullness on percussion, crepitant rales and bronchial breathing is present. In *hypostatic congestion*, the expectoration is copious, watery and blood-stained. It disappears when the patient sits up. *Catarrhal or lobular pneumonia* in children is usually secondary to bronchitis, is developed in both lungs, has no days of crisis, and no chill. *Pulmonary infarction* is rare without cardiac disease or pyæmia, is non febrile, and has intense dyspnœa. The expectoration is small black clots. Cases of pneumonia with cerebral symptoms may be mistaken for meningitis, but this can only happen should the chest not be examined. In *meningitis* there are no thoracic symptoms, no dyspnœa, and the face is pale and anxious. Pneumonia with typhoid symptoms is sometimes mistaken for *typhoid fever*. But the pneumonia which complicates typhoid fever does not come on until late in the fever, and the regular history of typhoid fever precedes its development (Bartholow and Loomis).

Prognosis.—About twenty per cent. of cases of pneumonia die. The prognosis depends on the age of the patient. After sixty the prognosis is always unfavorable. Most “sudden deaths” in the old are from acute lobar pneumonia. Double pneumonia is rarely recovered from. Complications such as pleurisy, capillary bronchitis, and pericarditis render the prognosis unfavorable. The symptoms which are unfavorable are as follows: frequency and feebleness of the pulse; great frequency and labor of respiration; lividity of the prolabia and face; an abundant purulent or muco-purulent expectoration; prune-juice expectoration; active violent delirium; low muttering delirium with prostration and subsultus tendinum. The occurrence of purulent infiltration, abscess, or gangrene renders the prognosis unfavorable (Bartholow and Loomis).

Treatment.—Acute lobar pneumonia is a well defined, self-limited disease. It is thought to be a constitutional disease with a local lesion. Loomis says “The pneumonic lung no more requires treatment than the intestinal ulcers of typhoid fever. It is

the general condition of the patient not the local changes, which is to govern us in the management of each case." If a patient be seen during the stage of congestion, Bartholow would apply five to ten full-sized leeches. Flint states that full doses of quinia, that is from 20 to 40 grains, given either at once or within eight or ten hours, may arrest the disease. *Aconite* is an effective sedative. Two to five drops of the tincture of aconite root may be given every two hours in the first stage. A large *mustard poultice* should be put on the chest, and removed when the skin is reddened, to obtain its stimulant effect on the vaso-motor nerves within, and the feet should be immersed in a hot mustard foot-bath. Bartholow states that modern researches have shown that *calomel* has a sedative action on the liver; lessens bile production and probably the whole functional activity of the liver; and as all cases of pneumonia are accompanied by hepatic disorders, it is clear that calomel is indicated. Calomel acts as an antipyretic and should be given on the first, second and third days of the disease in doses of from three to five grains. When the exudation begins to coagulate a solution of the carbonate of ammonia (gr. v.-x.) in liquor ammonii acetatis (℥ss) every three or four hours is very useful. The Germans prefer the muriate in the same doses. The chest may be surrounded with cotton-batting or flannel jacket. Absolute rest is essential. The sick room should be well ventilated, and its temperature between 65° and 70° F. The diet should consist of milk, eggs, beef-tea, and concentrated broths. For the first four days Loomis would keep the patient under the full influence of opium by hypodermic injections of morphine. There are two sources of danger—heart failure and high temperature. *Alcohol* is the most efficient means for preventing heart failure. It is best to begin with small doses, when the pulse is frequent, feeble and irregular, and not more than six or eight ounces of brandy should be given in twenty-four hours. A dicrotic pulse, delirium, muscular tremor and collapse are indications for alcohol.

To reduce the temperature there are two plans of treatment: the application of cold and internal antipyretics. Cold-sponging may be practised when it is grateful to the patient. Of the antipyretics, antipyrin and antifebrin are employed. Antifebrin

is to be preferred. In some cases of pneumonia quinine is more efficacious than antifebrin in reducing fever, given in doses of gr. x-xx. every two hours. If there is restlessness or wakefulness in the third stage, chloral hydrate serves a most useful purpose. Fifteen grains at night is usually all that is required. To promote the expectoration and to relieve the cough the proper remedies should be given. In weak subjects a little wine may be given from the beginning (Bartholow and Loomis).

PRESCRIPTIONS FOR PNEUMONIA.

R Potassii iodidi.....3j.
Ammonii muriatis.....3iss.
Mist glycyrrhizæ co.....3vj. -M.

Sig.: A tablespoonful four times a day, to promote absorption together with blisters to the chest. —DaCosta.

R Pulv digitalis.....gr. vj.
Quiniæ sulphatisgr. xij.
Ext. opii
Ext. ipecacuanhæ.....aagr. iij.—M.

Ft. massa et in pil. no. xii. div.

Sig.: One pill three times a day with the preceding mixture. —DaCosta.

R Ammonii carbonatis.....gr. xl.
Infusi serpentaria.....3iv.—M.

Sig.: A teaspoonful every three hours. (As a stimulant about the crisis). —Bartholow.

R Tinct. veratri viridis.....℥xl.
Spts. ætheris nitrosi3vj.
Liq. potassii citratis.....3ivss.
Syr. zingiberisad.....3vj.—M.

Sig.: A tablespoonful every three hours. (In early stage.) —DaCosta.

R Pulv. sinapis3ss.
Pulv. seminis lini.....3viij.—M.

Ft. cataplasma.

Sig.: Apply to the chest covering with oiled silk. —J. Lewis Smith.

Lobular Pneumonia. Called also catarrhal or broncho-pneumonia is always secondary, being preceded by inflammation and obstruction of the smaller bronchi, which lead to the consolidated lobules (Loomis).

Causes. It may be excited by an extension downward of a catarrhal process from the tubes to the air cells. It is most frequent between the ages of one and three, and in old age. The bronchitis of measles, whooping cough, influenza, etc., often leads to lobular pneumonia. Bad hygienic influences as to dress, habitations, humidity and exposure, favor its development (Bartholow and Loomis).

Symptoms. The beginning symptoms are chilliness, followed by fever, soreness of the chest beneath the sternum, cough, expectoration of a frothy mucus and some difficulty of breathing. Soon the breathing becomes rapid, superficial and labored, and the alveoli of the nose work quickly and continuously. The face at first is flushed and rather animated, and the eyes have a glaring expression, but the lips soon become bluish and cyanosis spreads over the face. The cough, which during the preceding bronchitis was loose, loud and bronchial, now becomes dry, hacking, and is usually very painful. The pulse ranges from 140 to 200 per minute. The temperature will gradually rise to 104°-105° F., unlike the sudden rise of lobar pneumonia. As the dyspnoea increases, there is increasing restlessness, never a moment of quiet, the struggle for breath and search for an easier position being incessant. The respirations are panting and may be 100 per minute. As the struggle for breath continues, the superficial veins grow into thick black cords, the result of carbonic acid poisoning, and the patient, a child, may tear the skin about the neck and face with its nails in a vain effort to remove supposed obstructions. The tongue becomes dry; sordes collect on the gums and teeth, and aphthous stomatitis is common (Bartholow and Loomis).

Physical Signs. -*Inspection* shows a deep depression of the abdomen from retraction of the lower ribs on inspiration. *Palpation* shows increase of vocal fremitus when a considerable number of lobules have collapsed. *Percussion* shows no change until the atelectasis occurs, and then slight dullness. *Auscultation* shows abundant *rales* all over the chest. They consist of subcrepitant *rales* which are somewhat coarser and louder than the crepitant, and are audible with both inspiration and expiration. There are also mucous and sub-mucous *rales* produced in

the larger tubes. There may be bronchophony (Bartholow and Loomis).

Differential Diagnosis. Catarrhal or lobular pneumonia may be mistaken for croupous pneumonia, bronchitis, acute tuberculosis and oedema of the lungs. *Croupous pneumonia* is, as a rule, unilateral and limited to a certain area; catarrhal pneumonia is bilateral and diffused over both lungs. The one is self-limited disease, the other has no fixed duration. *Capillary bronchitis* may be primary; lobular pneumonia is always secondary. The breathing is labored in capillary bronchitis and painful in pneumonia. The one gives resonance on percussion, the other dullness. In *acute tuberculosis* the fever is higher than in pneumonia. Acute tuberculosis occurs in early adult life. Lobular pneumonia occurs oftenest in the child of one to four years. In *oedema of the lungs* there is no fever (Bartholow and Loomis).

Prognosis. Half the cases die. The average duration of acute lobular pneumonia is from ten to fourteen days (Bartholow and Loomis).

Treatment. To promote the expectoration Bartholow would give three to six grains of the carbonate of ammonia and four to eight grains of the iodide of ammonia in solution every two hours. Some authorities would give the muriate of ammonia. Oil of turpentine, eucalyptol and copaiba may be used for the same purpose. If there is excessive dyspnea Bartholow would give two to three grains of the subsulphate of mercury to produce vomiting, and thus dislodge the mucus. For the high fever the same author would give two drops of tincture of aconite root and one of tincture of belladonna, every two hours to a child of two years. For the continued high temperature three grains of quinine and one-fourth of a grain of digitalis can be given morning, noon and evening to a child of two years. The patient should be kept in a warm room well ventilated. The air of the room may be filled with the vapor of oils of eucalyptus and turpentine, by heating them with water. The chest should be enveloped in linseed or mild mustard poultices, or in very young children a stimulating liniment may be rubbed on the chest two or three times a day and cotton batting applied. The food should be fluid and nutritious. Stimulants must be given from

the onset of the disease. Brandy or gin in milk, ten to twenty drops every three or four hours, may be given to a very young infant. If the disease is prolonged and emaciation is marked, cod-liver oil and the syrup of the iodide of iron should be given, with a change of air (Bartholow and Loomis).

PRIAPISM.

Is more or less continuous erection without desire. Intercourse with ejaculation may take place in some forms of priapism (Keyes).

Causes.—Erection has long been observed to follow injuries to the cerebellum and spinal cord. Out of eleven cases of cerebellar hemorrhage, erection of the penis was noted six times by Serres. Death by hanging is often accompanied by partial erection. Erections are often absent after some diseases and injuries of the spine producing paraplegia; but in other cases the disease or injury is attended by priapism. Lallemand mentions the case of an officer who was thrown from his horse, and at once became paraplegic, and had priapism. As his paraplegia gradually got well his priapism ceased. The same author states the case of a soldier, who climbing out of garrison to see his mistress, fell upon his sacrum, and became partially paraplegic with priapism. As the priapism produced retention of urine, he attempted to free himself of it by masturbation, but without success. On one occasion, he indulged in copulation with his mistress almost continuously for several hours, until he had exhausted his partner—but all to no effect. He had no pleasure or ejaculation.

Large doses of cantharides will produce erection without desire. Prolonged mental exertion, over-anxiety, etc., are sometimes attended by priapism, due perhaps to some local injury, as gonorrhoea, the passage of a stone or a sound. Some prostatic affections are attended by priapism. Many writers mention *leucocythæmia* as a cause of persistent priapism. Salzer gives as causes extravasation of blood in the corpora cavernosa, impeded circulation in the smaller vessels and the formation of thrombi. Mackie notes a case of persistent priapism lasting twenty-one days in an old man of seventy. After nineteen days the right

corpus cavernosum swelled and was relieved by incising it. He thinks that a small extravasation in the corpus cavernosum was the immediate cause of the priapism. Priapism in children is often due to stone in the bladder, tight prepuce, worms in the rectum, etc. (Keyes).

Treatment.—Is hygienic and symptomatic. The lower part of the spine and perineum may be blistered. Electricity, strychnine, ergot and bromide of potassium may be tried. Iodide of potassium has been successfully used (Keyes).

PRICKLY HEAT.

Called also *lichen tropicus* because it is met with in tropical climates in its most typical form, is a congestion or slight inflammation at the orifices of the sudoriparous follicles (Anderson).

Cause.—Heat is the exciting cause.

Symptoms. Little, bright red, acuminate papules, about the size of pinheads, make their appearance in great numbers, giving to the skin a rough feeling. They may be closely set together, but generally remain discrete, the intervening skin having a healthy appearance. Here and there little vesicles, such as are observed in *sudamina*, often make their appearance. This eruption is found chiefly upon the trunk and forehead, and is accompanied by a tingling, pricking, or itching sensation. It is aggravated by the use of stimulating food and drink, as well as by heat and over-clothing. The rash frequently occurs in successive crops and the duration is indefinite (Anderson).

Treatment.—Keep the patient cool. The skin may be frequently sponged with vinegar and water, or a weak lotion of carbolic acid followed by a soothing dusting powder, such as equal parts of oxide of zinc, lycopodium and starch. The diet should be very light and unstimulating. Saline aperients are useful, as well as diuretics and cooling acidulated drinks (Anderson).

PROSTATITIS.

Is an inflammation of the prostate gland. Congestion of the prostate occurs physiologically during venereal excitement. If such excitement be unduly prolonged without being gratified,

or if the imagination be given up to erotic fancies, the mucous follicles of the organ secrete more or less of a peculiar, viscid, bluish mucus, without odor, which mixed with urethral mucus, finds its way out at the meatus. This is perfectly natural. It is analogous to the watering of the mouth of a hungry individual at the sight, smell, or even thought of food. This drop of mucus appearing during erection excites in the minds of many individuals whose sexual requirements are not met, the most lively alarm, and they hasten to consult a physician. Marriage, to place him in natural sexual relations, will effect a cure. If this physiological hyperæmia be kept up for a long time, the prostate is liable to remain congested, and cause frequent urination and a gleet discharge. Slight congestion of the prostate frequently complicates gonorrhœa and stricture, and it may pass on to actual inflammation. Congestion may be excited in the prostate by sexual excess and lead to prostatitis (Keyes).

Causes. Among the causes of *parenchymatous prostatitis* may be mentioned gonorrhœa, stricture, extreme and prolonged sexual excitement, acid urine, cold, injury, strong injections, and cantharides internally. Gonorrhœal inflammation after the first week, may run down the urethra and involve the prostate, if the patient indulge in alcohol, sexual intercourse, takes violent exercise, or uses strong injections deep in the canal. The inflammation behind a stricture may run back to the prostate.

Termination. Prostatitis commences as congestion and passes on to true inflammation. It terminates by resolution with exudation of pus, by abscess, or it may linger indefinitely as a chronic inflammation (Keyes).

Symptoms. The prostate swells rapidly and often attains the size of an orange. The mass may be felt with the finger in the rectum, and is exceedingly sensitive to pressure, unlike hypertrophy of the prostate. In prostatitis, the finger in the rectum or pressure over the pubes brings on a desire to urinate. The patient is conscious of something protruding into the rectum. The perineum feels hot and is sensitive to pressure. There is a feeling of weight and dragging in the pelvis, penis and scrotum. There may be pain in the back and limbs. The stream of urine is small and is passed with effort. The prostate may swell to

such an extent as to cause retention. There is a constantly recurring, never satisfied desire to urinate. Voiding the urine causes pain, but the pain is most severe as the last drops are being expelled. The patient has fever, and is irritable, despondent and suspicious. Recovery is complete in from one to three weeks (Keyes).

Treatment. The main treatment is rest in bed with hips raised, some alkaline diluent for the urine, and enough anodyne to control severe pain. Rectal injections of hot water may be given. The patient may drink flaxseed-tea, infusion of triticum repens with some citrate of potash or Vichy water. If the prostatitis is due to gonorrhoea all active treatment and urethral injections must be discontinued. Ten to fifteen leeches may be applied to the perinaum. Hot applications to the pelvis are useful. At night full doses of bromide of potassium with from gr. v. xx. chloral hydrate may be given to produce sleep (Keyes).

PROSTATORRHŒA.

Is also called *follicular prostatitis*. In this disease, the mucous surface of the sinus of the prostate and of the mucous follicles and ducts are inflamed, while the substance of the organ for the most part escapes.

Symptoms.—It runs a chronic course. It may come on during gonorrhoea as the inflammation extends backward. The main feature of the disease is a slight oozing from the meatus of a muco-purulent matter. The discharge may be more profuse when at stool. The patient thinks the discharge to be semen. *This discharge is exceedingly rebellious to treatment.* If the prostaticorrhoea, or follicular prostatitis, and the parenchymatous coexist, then a peculiar weight is felt in the perineum with pain. Walking becomes painful. Crossing the legs decidedly increases the pain, as does the sitting posture. There is frequency of urination. There is pain on passing water, which contains pus and blood. The pain may be felt at the end of the penis. The stream of urine is sometimes suddenly interrupted. The patient may be feverish and depressed. A slight gleety discharge accompanies this condition (Keyes).

Treatment.—No remedy is so efficacious as blistering of the perinaeum. Cantharidal collodion may be painted on one side of the perinaeum, and the patient confined to bed for forty-eight hours, then the other side may be painted. Alkaline diluents may be given, and the bowels kept regular. A good diet and tonics are necessary. If this treatment fail, nitrate of silver (gr. v. x. to the ʒj.) may be injected into the membranous urethra (Keyes).

PRURIGO.

Is a papular skin disease with intense itching.

Causes. Very little is known concerning its cause. The fact, however, that it is met with almost exclusively amongst the neglected children of the poor, seems to lead to the conclusion that defective diet and absence of proper hygienic surroundings are favorable to its occurrence (Anderson).

Symptoms.—As a rule it begins in infancy, usually at first upon the legs in the form of wheals like those of nettle-rash. These come and go until the child is five to seven years of age. At this time many solitary papules, about the size of hemp-seeds, make their appearance. They may be more readily felt than seen. The papules are irritable and soon become congested by scratching. The skin assumes a dusky tint and is covered with a fine mealy dust, and short stiff hairs. In some cases the skin feels as rough as a file and is thickened. The papules may suppurate. The *eruption* is more severe upon the extensor surfaces of the legs and arms than on the flexor surfaces. The trunk suffers some but the head, neck, scrotum, penis, palms and soles are usually free. *Prurigo* is a most loathsome disease when fully developed. It is common in parts of Europe, but is rarely met with in England and America (Anderson).

Prognosis.—Is very unfavorable. Hebra said that the patient may do whatever he pleases yet his malady will follow him to his grave (Anderson).

Treatment.—The diet should be generous and the hygienic surroundings good. Tonics are indicated and a long continued course of arsenic in full doses. Carbolic acid internally thrice daily is beneficial. *Local treatment* is important. Warm, vapor

or Turkish baths should be ordered. A mixture of equal parts of soft soap, rectified spirit and oil of cade may be rubbed firmly into the skin in the morning and removed in the bath at bedtime, after which the following ointment may be applied:

R Sulphuris.....
 Glycerinæ
 Olei rusci.....aa.....5vi.
 Ung. rumicis.....3ij.—M.
 Ft. ungt.

Sig.: Apply locally.

In some cases baths of corrosive sublimate, (5ij to the bath) are beneficial (Anderson).

PRURITUS.

Is a functional affection of the skin characterized by irritation or itching and unaccompanied by eruption. Pruritus is a common affection. It may be continuous or intermittent, and is most complained of after getting warm in bed. It may involve the whole body, as we often see in old people whose health is failing; but more commonly it is localized, and the parts most liable to be attacked are the anus, the scrotum, and the labia (Anderson).

Causes.—In any case, it is the result of direct or reflex irritation of the cutaneous nervous filaments. Derangement of the digestive organs and constipation may cause it. Diseases of the kidneys, uterus and ovaries may produce it. It often results from impediment to the free return of venous blood from the part. It accompanies jaundice and results from the poisonous action of the bile acids, circulating with the blood, upon the nerves of the skin. A frequent source of pruritus is the presence of sugar in the urine, especially of that form which attacks the genital organs. Elderly women who have intense itching in and around the vulva, probably have glycosuria. Sometimes the cause of the pruritus disappears, while the itching continues owing to the cutaneous nervous filaments having contracted a bad habit. Finally, it may result from cold, and is then chiefly met with on the lower extremities (Anderson).

Treatment.—Try to ascertain and remove the cause. If dependent on hæmorrhoids, jaundice, diabetes mellitus, or digestive derangement, treat these morbid conditions. If the cause cannot be discovered, the treatment will be purely empirical, and in these cases it is desirable to have a good many strings to our bow since the affection is very obstinate. In such cases carbolic acid may be tried in the following formula:

R Acidi carbolici.3ij.
 Syrupi aurantii.....3j.
 Aquæ.3v.—M.

Sig.: A teaspoonful in a glass of water three times daily on an empty stomach.

Nerve tonics, as strychnine, phosphorus, and arsenic may be beneficial. Atropine may be tried as a nerve sedative. Dr. Bulkley, of New York, would give ten drops of the tincture of gelsemium every half hour till relief is obtained, or until one drachm is taken. If these remedies fail, bromide of potassium, sodium, or ammonium may be tried. Occasionally relief is obtained by sponging the surface with a warm decoction of poppy heads, or by the application of a weak continuous current of electricity. Alkaline baths may be tried (Anderson).

PSORIASIS.

Is a chronic eruption characterized by the appearance of dusky-red, or even coppery, slightly elevated patches of various sizes, covered with silvery-white, imbricated, and very adherent scales, with slight itching, but no exudation of the surface of the skin.

Frequency.—It is by far the most frequent of the affections of the skin, except eczema and scabies.

Parts Attacked.—The eruption may occur on any part of the body, but in the majority of cases it commences on the elbows or knees, and is frequently limited to these parts. Next to the elbows and knees the head is the part most commonly attacked (Anderson).

Causes.—Are very obscure. Psoriasis is an hereditary disease. Sir E. Wilson was of the opinion that psoriasis is “a manifestation of the syphilitic poison, after transmission through

at least one, and probably through several generations." There is a non-syphilitic and a syphilitic form. Psoriasis may be induced by debility, but usually patients are in apparently good health. Long continued mental fatigue, as from over-study, great anxiety, etc., is very apt to call out the disease. It is met with in all ranks of life. Sea-air and sea-water are apt to call out an attack in one predisposed (Anderson). It is severest in the winter season.

Symptoms.—As a rule, *psoriasis* does not occur before the sixth year, and usually comes out before the age of twenty-five. *It is throughout a dry eruption.* It is a non-febrile affection. The nails of the fingers and toes are sometimes affected and fall off. At the outset of the disease, little silvery-white scattered spots about the size of pin heads make their appearance. As the disease advances, these spots may increase in size, being two to three inches in diameter. There is scarcely any itching. It is not contagious, but can often be traced to hereditary taint. The eruption may be on any part of the body, but almost always on the elbows and knees. Relapses are the rule. Psoriasis may last five, ten, fifteen, twenty or thirty years, or even a whole lifetime (Anderson).

Prognosis.—The disease is not fatal, but relapses are common.

Treatment. The patient should take a course of baths, have plenty of fresh air, take his meals at regular hours, go to bed early, rise early, and have nothing to worry him. We should tone up the digestive powers. Nitro-muriatic acid and gentian often do good. Balsam of copaiba is occasionally of service. Tar and carbolic acid internally are often effectual. Liquor potassæ in doses of from twenty to thirty drops thrice daily in water is highly praised. Acetate of potash in doses of one-half drachm thrice daily is beneficial. A course of carbonate of ammonia may be tried, also strychnia. Arsenic is the most valuable internal remedy which we possess in the treatment of psoriasis, and few cases resist it if given long enough. Five or six drops of Fowler's solution may be given thrice daily after meals. It agrees better with the stomach if given in bitter infusion gentian. Next in value to arsenic comes cod-liver oil.

The two may be combined. The syrup of the iodide of iron may be given also. Some cases are cured by a course of Bantingism -i. e., by a meat diet. The patient should be urged to eschew a too sedentary mode of life, to take open air exercise, and to try change of air and scene. *Local treatment* is of much value. Warm baths and soothing ointments may be used. Cold cream, cucumber ointment, the benzoated oxide of zinc ointment, ointment of carbonate or subacetate of lead, or a mixture of zinc and almond oil may be employed with advantage -three or four applications daily. The hydropathic treatment may be tried. *Chrysophanic acid* may be used in the form of an ointment, as follows:

R Acidi chrysophanicigr. x.
 Adipis..... 5j.
 Lanolini 3j.—M.
Sig.: Use locally night and morning.

PUERPERAL FEVER.

Is an infectious disease, due as a rule, to the septic inoculation of the wounds which result from the separation of the decidua and the passage of the child through the genital canal in the act of parturition (Lusk).

Frequency.—The total number of deaths to the entire number of confinements is estimated to be in the proportion of 1 to 85, or from puerperal fever alone in the proportion of 1 to 146 (Lusk).

Causes.—One source of puerperal fever is a contaminated atmosphere. Another and frequent source of puerperal fever is by direct inoculation. Any material of a septic character, introduced into the genital passages of a woman during or after confinement, may produce a general infection of the system. Pathogenic bacteria are invariably associated with puerperal fever, and to them the infectious qualities of the disease are due. Puerperal fever is really a surgical fever modified, however, by the peculiar physiological conditions which belong to the puerperal state. It is a matter of ordinary experience that the retention of a small bit of the membranes within the uterus will produce fetid lochia, and as the result of infection, a febrile condi-

tion which as a rule, subsides with the expulsion of the offending body and the use of disinfectant washes (Lusk).

Prevention. The physician should insist upon the value of plenty of light and fresh air as a means of contributing to the speedy recovery of child-bed women, otherwise they may become poisoned with their own exhalations. Complete antisepsis before confinement will prevent the introduction of germs and after confinement will paralyze their action. Employ means to promote uterine contraction. Refrain from attending a case of labor when fresh from the presence of contagious diseases or septic material. In every case of labor the hands and forearms should be freely bathed in a carbolic solution before making a vaginal examination. All instruments employed during confinement should be disinfected. The warm carbolized douche after delivery stimulates uterine retraction and promotes the rapid healing of wounds in the vaginal canal. The fountain syringe should be used (Lusk).

Symptoms. The first febrile symptoms usually occur within three days of the birth of the child. The third day is the one upon which, ordinarily, the beginning of the fever is to be anticipated. After the fifth day an attack is rare. In most cases the fever is ushered in by chilly sensations, or by a well-defined chill. *A frequent pulse is always a suspicious symptom in childbed, even where the other symptoms are apparently normal.* There may be headache, sleeplessness, pain, vomiting, anorexia, and coated tongue (Lusk).

Treatment.—It is to be recommended that in every case of puerperal fever, the vagina be cleansed with a two to three per cent. solution of carbolic acid, or corrosive sublimate (1:3,000) every four to six hours. The douche in itself is absolutely harmless. No portion of the injected fluid should be retained in the vagina. All necrotic patches of the vagina or cervix should be touched with hydrochloric acid, or with a ten per cent. solution of carbolic acid, or with iodoform. Intra-uterine injections should be resorted to with extreme circumspection. Rarely are they indicated. Opium must be given for the pain. Purgatives (castor-oil in two or three tablespoonful doses) should be administered with caution. For the fever quinia may be adminis-

tered in five grain doses at intervals of four to six hours. Stimulants in the form of whiskey, rum, or brandy may be given in doses of one or two teaspoonfuls hourly. Ice-cold drinks should be freely allowed (Lusk).

PURPURA.

Is a general disease, characterized by circumscribed extravasations of blood into the skin (Loomis). Purpura may be *simple, rheumatic, hemorrhagic, or symptomatic*. In simple purpura there are only minute extravasations into the skin (petechiæ); in rheumatic purpura there is a combination of purpura and rheumatic pains in the joints; in hemorrhagic purpura there is great constitutional disturbance, petechiæ not only appear in the skin, but ecchymoses, and there may be hemorrhage from all the mucous tracts; in symptomatic purpura, the purpuric spots accompany the exanthems and contagious fevers, and are purely symptomatic (Bartholow, Loomis and Flint).

Morbid Anatomy. There are changes in the walls of the vessels, or in the blood, or in both (Loomis).

Causes. Purpura occurs more frequently in women than in men. It may appear in the healthy and robust. The leading causes are bites of insects, passive congestion, various drugs, such as iodide of potassium, phosphorus, copaiba, ergot, chloral, and mercury; snake-bites, embolism and thrombosis of cutaneous vessels, cachexia, as tuberculosis, cancer, Bright's disease, cirrhosis of the liver, anemia, leucocythæmia; diseases of the nervous system, small-pox, typhus and typhoid fevers, measles, scarlet fever, malaria, cholera, yellow fever, cerebro-spinal meningitis, icterus, scorbutus, etc. Purpura may be accidentally present in the course of any disease (Flint).

Symptoms.—In many cases for days before the eruption appears, there is a feeling of malaise with digestive derangement. Purpuric spots are bright-red, livid, or dark purplish-red in color, they do not disappear on pressure, and are unattended by itching or other signs of local irritation. As a rule the spots are not elevated. They vary in size from a pin's head to a large pea, or a spot may measure an inch in circumference, and change in color

successively from bluish-red to greenish brown, and yellow. It is more common from fifteen to twenty than at any other age. In ordinary cases a crop of purpuric spots lasts from a week to ten days, and usually first appear on the legs. Purpura is common in fruit seasons (Bartholow, Da Costa and Flint).

Differential Diagnosis.—Purpura may be confounded with *scurvy* and *skin diseases*. From *scurvy* it is distinguished by the absence of spongy gums and painful swellings. The fact that there is no itching, no desquamation, no suppuration or discharge, and no change in purpuric spots upon pressure suffices to distinguish them from the eruption of any form of skin disease (Loomis).

Prognosis.—Most cases terminate in recovery.

Treatment.—The diet should be nutritious and varied, and digestion is to be aided by tonic remedies, together with wine or spirits in small quantities. Dilute sulphuric acid may be given in doses of from five to fifteen drops every two hours combined with quinia. Ergot, gallic acid, and tincture of the chloride of iron may be of service (Flint).

PYÆMIA.

Is an infectious disease, characterized by the formation of infarctions, metastatic abscesses and diffuse local inflammation. Venous thrombosis and embolism are essential features of this disease, and cause metastatic abscesses in the lungs, liver, kidneys, spleen, muscles, heart and brain. Metastatic abscesses vary in size from a pea to a large walnut (Loomis).

Causes.—Many regard the pyæmic and septicæmic poison as identical, and pyæmia as nothing but a metastatic septicæmia. Inflammation of bone is a very frequent cause of a phlebitis which leads to pyæmic infection. Cellulitis, carbuncle, erysipelas, malignant pustule, and dissecting wounds are often complicated by pyæmia. Endometritis or lacerations about the genital tract are fruitful sources of pyæmia in the puerperal state (Loomis).

Symptoms.—Pyæmia is ushered in by a distinct chill or rigor followed by a gradual rise of temperature to 101° or 104° F. The

chills of pyæmia occur irregularly, and are followed, after the first two or three, by profuse and exhausting sweats. The pulse is frequent, 120 to 140, small and often intermittent. The skin may be jaundiced. The breath has a peculiarly sweet, sickish odor. The tongue becomes coated, glazed, dry, brown and fissured. Sordes collect on the teeth. There are anorexia and great thirst. There is usually diarrhoea with nausea and vomiting (Loomis).

Differential Diagnosis. The diagnostic points of pyæmia are, irregularly recurring chills and sweats, great variations in temperature, with the signs of multiple abscess in the internal organs. Pyæmia may be confounded with septicæmia, intermittent fever, acute yellow atrophy of the liver, acute articular rheumatism, typhus and typhoid fever.

Pyæmia is ushered in by a distinct chill; septicæmia by slight shivering, or mild rigors only. In pyæmia the chills recur; in septicæmia there is but one chill. In pyæmia there are profuse sweats which recur; in septicæmia, they are slight and never recur. In pyæmia the temperature gradually rises to 102° to 104° F.; in septicæmia it is high at the onset, 105° to 107° F. In pyæmia the skin is jaundiced; not so in septicæmia. There is a sweet, sickish odor to the breath in pyæmia, absent in septicæmia. In pyæmia multiple abscesses develop, never in septicæmia (Loomis).

Prognosis. Is always unfavorable.

Treatment.—Cleanliness, good ventilation, sunlight and quiet are important measures. Quinia, carbolic acid, salicylic acid and oil of turpentine may be used internally. A good diet and stimulants should be administered in large quantities (Loomis).

PYROSIS.

The regurgitation of a considerable quantity of a liquid which is either insipid or saltish or brackish and is sometimes acid when the stomach is empty of food and usually in the morning is called *pyrosis* or *waterbrash*. This liquid consists mainly of saliva. Sometimes there is not only a feeling of oppression in the thorax but a severe pain is referred to the heart accompanied

by palpitation and dyspnoea. In such cases the patient is very apt to imagine he has heart disease. *Pyrosis* is not a disease but a symptom of certain cases of gastric dyspepsia (Flint and Loomis).

PARAPHIMOSIS.

Exists where the prepuce gets behind the corona glandis and cannot be replaced (Keyes).

Causes.—An unnaturally tight preputial orifice is a predisposing cause. Young boys who retract the prepuce for the first time often find themselves unable to replace it. Rings of metal forced upon the penis retracting the prepuce may be a cause. Inflammatory paraphimosis may depend upon balanitis, gonorrhœa, herpes, chancroid, chancre, etc. (Keyes).

Symptoms. In paraphimosis the glans penis is swollen and livid. If the patient is seen at once, there may be no inflammation, either of the prepuce or the glans. If the stricture of the prepuce is tight enough to arrest the circulation it will cause gangrene (Keyes).

Treatment. *I. Of paraphimosis with strangulation.* In strangulation the glans penis is turgid, swollen, blue-black, cold and devoid of sensibility. Ice should be first used locally to produce shrinkage and a few small punctures may be made to let out serum from the ridge in front of the stricture. In these cases ether should always be given to relax the tissues and reduction attempted. If a prolonged, careful attempt at reduction fails, the strictured point must be divided. After reduction the treatment consists in position, rest and cleanliness, syringing the preputial cavity with warm water.

II. Of paraphimosis without strangulation.—In recent cases reduction must be effected or inflammation will surely set in. Reduction may be accomplished by using the above means (Keyes).

PHIMOSIS.

Exists where the orifice of the prepuce is so small that the glans penis can not be uncovered. Phimosis is congenital or acquired, simple or inflammatory, complicated by other diseases,

or by adhesions. With very young children, phimosis is so common that it may be considered normal. The foreskin of a child is developed out of all proportion to the rest of the penis. This long prepuce is often a source of anxiety to young mothers. A positive indication for operation, in the case of a child, does exist, where the preputial orifice is smaller than that of the urethra. This condition is known to exist when the prepuce "balloons" during micturition. When the prepuce is too tight in the adult, an operation may be called for as a prophylactic against future disease, such as chancre, chancroid, gonorrhœa, or an attack of herpes (Keyes).

Causes.—Phimosis may be caused by frequent attacks of preputial inflammation, leaving a thick, long, indurated, inelastic prepuce, interfering not only with sexual intercourse, but sometimes with urination. Another common cause of acquired phimosis is the cicatrization of multiple chancroid around the orifice of the prepuce. *Diabetes* is said to be a cause of phimosis. Marx reported a case of phimosis where a passionate and jealous woman made her lover wear a gold padlock (sometimes two) with which she secured the preputial orifice, keeping the key herself. The victim of her charms carried his padlocks, which were replaced from time to time through new punctures, during four or five years, until such a degree of irritation had been set up as to require removal of the prepuce. Inflammatory phimosis is a transient condition, but may leave true phimosis behind (Keyes).

Treatment.—It is better not to circumcise when the prepuce is inflamed, if it can be avoided. Keep the patient in bed, and elevate the penis. Evaporating lotions may be used locally, containing a little spirit or a (gr. x.-xx.) solution of tannin, frequently washing out the cavity of the prepuce by means of a syringe with dilute lead-water or carbolic acid (gr. ij. to the ʒj.).

Remote Results of Phimosis.—It leads to imperfect development of the glans penis, is an obstacle to sexual intercourse, causes spermatorrhœa, frequent desire to urinate and cystitis. According to Dr. Sayre, of New York, phimosis may cause curvature of the spine in children, and priapism (Keyes).

PTERYGIUM.

Is a triangular thickening of the conjunctiva, which advances from the caruncle to the cornea and encroaches more or less upon the surface. The favorite site is the inner side of the eyeball. The structure grows very slowly. It may impair sight before it reaches the pupillary area. The apex is more or less rounded and seems to dip into the substance of the cornea. The edges near the apex will be found to be rolled under and will admit a fine probe to be thrust beneath for a short distance. It appears mostly in persons who are exposed much to the weather, or to dust, and who are of advanced age. A variety of *fleshy ptergium* may occur at any portion of the eye (Noyes).

Treatment.—Is surgical and preferably by excision. Seize the corneal portion with toothed forceps and as it is lifted, push beneath it a cataract knife and shave it from the cornea. Cut away as much of the base as may be needful. The raw surface may be covered by flaps of the adjacent conjunctiva sutured by silk. Cocaine will annul the pain. An opacity of the cornea is left, which will continue for months. It may ultimately disappear (Noyes).

PYELITIS.

Is an inflammation of the mucous membrane of the pelvis of the kidney. There is hyperæmia of the mucous membrane, and exudation of pus and mucous takes place. In many cases with profuse production of pus there is an obstacle to the passage of the urine, and the pus is retained in the dilated pelvis, causing the condition known as *pyonephrosis* (Flint).

Causes.—Pyelitis is seldom, if ever, a primary disease. Its most frequent cause is the presence of calculi in the pelvis of the kidney. Obstruction to the flow of urine is a cause of pyelitis. Such obstructions are furnished by calculi, tumors pressing on the ureter, enlarged prostate, stricture of the urethra, phimosis, and paralysis of the bladder in cases of paraplegia. In these cases the urine is retained and decomposes, and thus produces irritation. The pressure of a retroverted or pregnant uterus may cause obstruction to the flow of urine. Pyelitis may be due to

gonorrhœa, specific vaginitis, and urethritis in females. In these cases cystitis is nearly always present. Copaiba, turpentine, and cantharides passing through the kidneys may cause pyelitis. Pyelitis may be a complication in pyæmia, puerperal fever and the exanthemata (Bartholow, Flint and Loomis).

Symptoms.—Pain in the back is present in the mild as well as in the severe cases. This pain, as a rule, is severest over one or both lumbar regions, is often of an aching character, and shoots down along the course of the ureters. The voiding of urine is almost incessant, and is attended by severe pain. Acute pyelitis is usually ushered in with rigors. Symptoms of hectic fever may also mark the occurrence of permanent obstruction of the ureter and the development of that condition termed pyonephrosis. There is lassitude and more or less pain on motion. There are changes in the urine. In its early stage the urine contains blood mixed with mucus and epithelium cells from the pelvis of the kidney. The presence of these epithelial cells is its most certain diagnostic indication. The specific gravity of the urine ranges from 1025 to 1030, and usually has an acid reaction. The urine may be ammoniacal. *Calculus pyelitis* is attended with more pain and hemorrhage than the other forms. In the advanced stage of pyelitis, the discharge of pus is constant, but if the ureter becomes blocked, for a time the urine may be quite normal, but the removal of the obstruction is followed by a copious flow of purulent urine. If there be permanent obstruction in the ureter, a tumor develops in the lumbar region. The existence of the tumor is determined by the presence of bulging between the crest of the ilium and the false ribs on the side involved. Palpation shows deep-seated fluctuation over the tumor and tenderness on pressure. Percussion shows dullness over the tumor. A hypodermic needle will complete the diagnosis (Bartholow, Flint and Loomis).

Differential Diagnosis.—The diagnosis of pyelitis in the acute stage rests mainly on the presence of the characteristic epithelium of the pelvis mixed with blood and mucus. In a more advanced stage, in addition to the above, there is pus. The presence of pus and acid urine, with pain in the lumbar region, accompanied by the development of a tumor at the seat of pain,

which tumor gradually increases in size and suddenly disappears at the same time that a copious discharge of pus takes place from the bladder, which discharge is attended by a sense of great relief to the patient, renders the diagnosis of *pyonephrosis* very certain.

Pyonephrosis may be confounded with hydronephrosis, hydatid cyst and perinephritic abscess. *Hydronephrosis* is distinguished from *pyonephrosis* by the non-purulent character of the urine, and by the absence of constitutional symptoms. An aspirating needle will generally decide the diagnosis. In *perinephritic abscess* neither pus, blood, mucus, epithelia nor albumen will be found in the urine; in *pyonephrosis* they are common and constant. Pain on motion and fever are marked symptoms in abscess and slight or absent in *pyonephrosis*. In women a *pyonephrotic* tumor has been confounded with an ovarian cyst. The exploring trocar will very quickly remove all doubts. *Pyelitis* is distinguished from *cystitis* by the absence of vesical pain and frequent micturition and by lumbar pain. In *pyelitis* the urine is acid; in *cystitis* it is alkaline (Loomis).

Prognosis.—Depends much on its causes.

Treatment.—Remove the cause if possible. In acute *pyelitis* if there be fever, pain, and bloody urine, wet cups should be applied to the loins followed by a hot bath and a hypodermic of morphine to relieve pain. Alkaline drinks should be given and the patient kept in bed. If the urine is acid, liq. potassii citratis should be given. In ammoniacal urine benzoic acid is extremely serviceable. In chronic *pyelitis*, eucalyptol, oils of turpentine, copaiba and cubeb limit the formation of pus. Cod-liver oil and quinine should be given with a nutritious and non-stimulating diet. Alkaline mineral water and milk should be freely given. If a tumor exist aspiration may be performed (Bartholow and Loomis).

PICA AND MALACIA.

Are terms applied to perversions of appetite. *Malacia* denotes a morbid craving for certain articles of food, whereas *pica* denotes a desire for innutritious substances. The craving for strange kinds of food during pregnancy and in hysterical women

is familiar to all. The innutritious substances frequently craved are charcoal, chalk, slate, and certain kinds of earth. In some cases of *pica* the articles are at first taken with the idea of improving the complexion and in this way the habit is formed; but in other cases a morbid uneasiness in the stomach leads to their use. This appetite is chiefly confined to young females and is generally associated with anæmia or chlorosis.

Treatment.—Treat the associated disorders and prohibit the use of the above substances (Flint).

POLYPHAGIA.

Called also *bulimia* denotes a craving for food beyond the wants of the system. These terms are not correctly applied to the increased appetite during convalescence from fevers or other acute diseases. In *true bulimia* the amount of food craved far exceeds the requirements for nutrition. *Bulimia* may be another name for gluttony. The love of eating may be cultivated to such an extent that little else is thought of, and persons who fall into this habit may be said to live to eat, rather than to eat to live. Habits of gluttony may lead to dyspepsia, obesity, fatty degeneration of the heart and to various affections. *Bulimia* may be a symptom of mental disease, or of diabetes. Cases have been reported in which the morbid appetite appeared to be insatiable, all kinds of food—raw meat, candles etc.,—being eaten in some cases with avidity and in enormous quantity (Flint).

Treatment.—Recovery from this condition is to be expected. The indications are to regulate the diet, to establish the general health, to correct any disorder of digestion, and to palliate the excessive craving for food by opium, or sometimes by nauseant remedies. Swallowing pieces of ice has been found effective as a palliative measure (Flint).

PARALYSIS AGITANS.

Sometimes called Parkinson's disease, or shaking palsy, or the trembles, is a disease of advanced life characterized by motor weakness and tremors of the voluntary muscles, especially of the limbs, occurring independently of muscular exertion (Loomis).

Morbid Anatomy.—Paralysis agitans is a neurosis, a functional disorder. As yet no constant changes have been discovered. Some authorities consider it of spinal, others of cerebral origin (Bartholow and Loomis).

Causes.—It rarely occurs before forty, and is more common in men than women. It is not known to be hereditary. The principal causes are strong emotion, fright, grief, anxiety, distress of mind, great bodily fatigue, and exposure to cold and dampness (Bartholow and Loomis).

Symptoms.—Tremor is the chief symptom of paralysis agitans. The trembling consists of fine small movements. Paralysis agitans comes on slowly, and progresses slowly. It usually begins in one foot, hand or possibly a single finger, and gradually becomes general. The tremors are often confined to one side of the body for a long time—hemiplegic type; less frequently to both lower extremities—paraplegic type. Any effort of the will, as grasping, writing, or walking, will stop the irregular motions. Sometimes the disease sets in abruptly in consequence of some sudden shock. Mental emotion and exercise increase the trembling, and sleep and chloroform narcosis suspend it. The trembling consists in muscular contractions and relaxations. The hands are apt to assume a position as in writing. As a rule, the head and neck are not affected. The countenance assumes a fixed, staring look of distress, the head is drawn forward and the trunk flexed. The voice is often tremulous and speech is slow, hesitating and laborious. The muscles are easily tired. The patient rises slowly and is deliberate in starting, but when under way, he goes in a dog-trot with the head and body bent forward (festination). Complaints are made of cramps, of muscular stiffness, of a sense of excessive heat, and of restlessness. The knee-jerk is normal (Bartholow, DaCosta, Flint and Loomis).

Prognosis.—Although the disease may last for twenty or thirty years, death most commonly results from some intercurrent disease. The outlook is never favorable (Loomis).

Differential Diagnosis.—Paralysis agitans may be confounded with *disseminated sclerosis*, *senile trembling*, *alcoholic*, *lead* and *mercurial trembling*. In *disseminated sclerosis* tremors occur

only when the muscles are in use, the disease begins in the lower limbs, affects younger persons, and paralysis occurs early. The patient has no tendency to run forward and does not have the peculiar countenance. In *paralysis agitans* the tremor is not dependent on volition; it begins in the upper limbs, and persons under forty years are exempt from this affection. Paralysis occurs late. The patient has a tendency to run forward and has a fixed, staring countenance. In *senile trembling* the head is chiefly affected and there is no paresis of muscles, no stiffness, no deformity of the extremities, and no impulse to run forward. Alcoholic, lead and mercurial trembling are readily diagnosed by the previous history (Bartholow, Flint and Loomis).

Treatment. No plan of treatment is satisfactory. Hyosecynamine, according to Charcot, is the best remedy to moderate the trembling. Gelsemium is useful. The chloride of gold and sodium, corrosive sublimate in small doses, nitrate of silver, and the lactophosphate of lime with arsenic may be tried. The galvanic current may be tried (Bartholow and Loomis).

RACHITIS.

Called also *rickets*, *rachitismus* and *osteomalacia*, is a constitutional disease of the first years of life, characterized by a disorder of nutrition in which the growth of the bones is irregular, calcification imperfect, and deformities ensue (Bartholow).

Causes.—Rickets is a common result of faulty diet and of anti-hygienic surroundings, and is therefore frequent among the poor of cities, and especially in families who dwell in crowded tenement houses. It is more common in the great cities of England and Europe than in this country. Acute disease and troublesome dentition predispose to it. It is more apt to occur in children of rachitic, syphilitic or phthisical parents. The offspring of consanguineous marriages, of those too old, or of the feeble and cachectic, are, as a rule, rickety. The rickety constitution may also be inherited. Of the exciting causes, the most common is the use of food not sufficiently nutritive, or, if nutritious, not suited to the age and digestive powers of the child. Thin and poor breast-milk and artificial food of poor quality are

common causes of rickets. The presence of lactic acid in the intestinal canal of the infant may produce rickets according to some authorities. The disease is rare before the fourth and after the seventh year of life. Children of well-to-do families are also liable to rickets (Bartholow, Loomis and J. L. Smith).

Symptoms.—Usually gastro-intestinal disturbances are the earliest symptoms of rickets. There may be vomiting, and the stools are frequent, pasty and offensive. The stools are light in color, because of the absence of bile, and have an acid reaction. The appetite is poor. The child wastes and grows dull, listless and peevish. Pains about the joints are complained of. The anterior fontanelle remains open.

Profuse perspirations of the head, neck, and upper part of the chest, appear chiefly while the child is asleep, but at the same time the abdomen and extremities are dry and hot. The child kicks off the covers from its legs. There seems to be tenderness of the whole body, and the rickety child cries out when it is taken up, or moved, or pressed on. It is languid, its countenance wearied, depressed, and aged, the face grows broad and square, the hair is thin, dry, and dead, the muscles are wasted, and flabby, the head sinks between the shoulders, and the abdomen is swollen and protuberant. Now the extremities of the long bones swell and have a knobby appearance, and the bone bends readily. The child may be knock-kneed, or have bow-legs. Curvature of the spine also takes place. The lower jaw is shortened, so that the upper teeth overlap the lower. The teeth appear late. Rachitic children are usually *pigeon-breasted*, and there is often marked deformity of the pelvis. The ribs, being softened, yield to the atmospheric pressure, thus projecting the sternum forward. The head of a rickety child appears larger than that of a healthy child of the same age, is flat on top, and the forehead is large and square. The limbs of the child are short in proportion to the trunk. Rachitic children are anæmic and very sensitive to changes of temperature. As the osseous changes go on emaciation goes on at the same rate, the abdomen enlarges still more, the muscles waste and grow weaker, there is less and less disposition to voluntary exertion, the perspirations are more free, the thirst increases, the bowels become more deranged, the stools

fetid, and the food passes unchanged. All rickety children do not emaciate. Persons who were rachitic in infancy frequently become very strong as they reach adult life (Bartholow, Loomis and J. L. Smith),

Differential Diagnosis.—The only disease with which *rickets* in its early stage may be confounded is *inherited syphilis*. Rickets does not appear, as does syphilis, during the first days of life. The “*snuffles*” and cutaneous lesions do not belong to rickets; the sweats about the head, the osseous changes, the enlargement of the spleen and liver, the weakness of the legs, the rims around the cranial bones, the large, lax joints, and the gastro-intestinal disturbances are symptoms of rickets which distinguish it from any other disease (Bartholow and Loomis).

Prognosis.—Is usually favorable, provided no serious complication arises. The complications of rickets are bronchitis, pneumonia, enteritis, laryngismus stridulus, convulsions, difficult dentition, diarrhœa, and chronic hydrocephalus (Loomis).

Treatment.—Good air, warm clothing, daily bathing, and a nutritious diet are essential. Children kept too long at the breast often become rickety, and should be weaned at once. Good cow’s milk, diluted by one-third to one-fourth of lime-water is the most suitable aliment. Scraped raw beef, with a small amount of wine, often produces marked improvement. Pepsin with bismuth may be given for the vomiting and diarrhœa. Pepsin with diluted muriatic acid is also useful. Cod-liver oil should be taken as early and in as large doses as the child can digest. Beef tea may be given. Rachitic children should not sleep on feather beds or high pillows. The perspirations may be relieved by sponging with vinegar and water. The following formula will be found useful in most cases:

℞ Olei morrhuæ ℥iv.
 Aquæ calcis.....
 Syrupi calcis lactophosphatis—aa ℥ij.—M.

Of this, one teaspoonful should be given four or five times daily to an infant of one year (Bartholow, Loomis and J. L. Smith).

RHEUMATISM.

Is a constitutional disease characterized by certain local manifestations seated in the articulations and the fibrous tissues in other parts (Flint).

Varieties.—I. Acute articular rheumatism. II. Sub-acute articular rheumatism. III. Chronic articular rheumatism. IV. Arthritis deformans. V. Muscular rheumatism, "Myalgia" (Loomis). *Acute articular rheumatism* frequently called *rheumatic fever* and *polyarthritis rheumatica* is the variety characterized by fever, inflammation of the joints occurring in succession and by a tendency to attack the peri- and endocardium.

Causes.—It is more frequent in men than in women because men are more exposed to the influences producing it. Protracted stay in damp apartments, lying between damp sheets all night, exposure of the body to cold and wet, when in a heated and perspiring state act only as an exciting cause. A special predisposition is requisite. This predisposition or diathesis may be congenital and inherited or it may be acquired. There is an hereditary tendency in about thirty per cent. of cases. It occurs mostly between fifteen and thirty years of age. It is rare in old age. The seasons of greatest prevalence are winter and spring. Some claim that an excess of *sulphur* or *lactic acid* in the blood will produce rheumatism if the vice of constitution exists. Erysipelas, dysentery, scarlatina, gonorrhœa, syphilis, pregnancy, scrofula, phthisis and cancerous affections seem to act as exciting causes (Bartholow, Flint and Loomis).

Symptoms.—In the majority of cases, acute articular rheumatism begins with a sudden attack at night. In some cases the pyrexia precedes the local manifestations for a few hours to one or two days. Before the attack patients often complain of muscular soreness, of a good deal of pain, stiffness and soreness of certain joints, of loss of appetite, coated tongue and constipation. The development of the disease is denoted by an affection of one or more of the larger joints. The local symptoms are pain, tenderness, increased heat, swelling, and redness of the skin. *Pain* is especially excited by movements of the affected joints, or by jarring the bed, or by pressure over the joints.

Swelling is most apparent in the knee, wrist, elbow, ankle, and smaller joints of the hands and feet, and is due to an effusion into the synovial cavity and surrounding tissues. The *redness* is due to an erythema. In some cases several joints are affected, but in other cases a single joint. *The most characteristic feature of acute rheumatism is its tendency to migrate from one joint to another.* Rheumatism illustrates the *law of parallelism* in that corresponding joints are often affected together. In an analysis of 21 cases, Flint found but a single violation of this law. This disease, therefore, is eminently one of the bilateral or symmetrical diseases. The joints most frequently affected are the ankle and knee; next the shoulder, elbow and wrist; then the hip and fingers, and finally the spine, the toes and the lower jaw. Acute articular rheumatism is always accompanied by more or less pyrexia. The axillary temperature in different cases varies between 102° and 110° F. The pulse rarely exceeds 100 per minute. Sweating is a symptom more or less prominent, occurring especially at night. The sweat emits a notably sour odor. In connection with profuse sweating, sudamina or miliary vesicles frequently appear on the neck and trunk. Urticaria, erythema and herpes labialis sometimes occur in the course of the disease. The appetite is lost, thirst is urgent, the tongue is coated, the saliva is acid, usually the bowels are constipated, and the urine is diminished. There is sleeplessness. *Endocarditis* occurs in some cases of rheumatism. The inflammation, as a rule, affects the membrane situated upon the mitral valve. *Pericarditis* occurs less frequently. It is convenient to speak of these affections as complications, but, properly speaking, they are to be reckoned among the local manifestations of the disease. They rarely occur in patients beyond forty. Other rare complications are purulent meningitis, cerebral embolism, uræmia, insanity, bronchitis, pneumonia, peritonitis, nephritis, myocarditis, phlebitis, suppurative arthritis, erysipelas and pyæmia. In a small number of cases of acute rheumatism, important symptoms develop which are described under the names of *cerebral rheumatism* and *rheumatic hyperpyrexia*. In these cases, there are very high fever, delirium, muscular twitchings, stupor, face cyanosed, etc. These symptoms seem to be referable to some profound infection or in-

toxication which acts upon the thermic and other nervous centres. The disease ends by self-limitation. The duration of acute articular rheumatism is three weeks to thirty days (Bartholow, Flint and Loomis).

Differential Diagnosis.—Acute rheumatism may be mistaken for *gout*, *pyæmia*, *synovitis*, or *simple acute arthritis*, *urethral rheumatism*, and *hysterical joint*. Gout attacks the small and rheumatism the large joints. In gout the fever is lower, and the duration of the attack shorter than in rheumatism. Sweats and cardiac mischief distinguish rheumatism from gout. In gout the attack comes on at night in the great toe joint; there is a history of high living, and an excess of uric acid in the blood; not so in rheumatism. Gout is rare before thirty-five, while acute rheumatism is a disease of early adult life. *Tophi* never form in rheumatism, but are always present late in gout. In *pyæmia* there are recurring chills, sickly, sweet breath, slow development, jaundice, multiple abscesses, etc. *Synovitis* or *acute arthritis* is distinguished by its persistence in one joint, by the absence of sweats, of constitutional disturbance and of cardiac lesions, and by the graver local symptoms. *Urethral* or *gonorrhæal rheumatism* attacks one joint, usually the ankle or wrist, does not migrate, is slower to recover, is unaccompanied by fever, and is coincident with a urethral discharge. *Hysterical joint* is without swelling or change of temperature, and is only sensitive when the patient's attention is fixed on it (Bartholow, Flint and Loomis).

Prognosis.—This disease is rarely fatal. The rule is that no crippling of the joints follows the acute attack. The worst legacy acute rheumatism leaves is a crippled valvular apparatus in the heart. Some authorities say that seventy-five per cent. of all cases of rheumatic fever are accompanied by cardiac inflammations, others say five per cent. The complications—pericarditis, endocarditis and embolism make the disease serious. Ulcerative endocarditis is a grave sequel of the disease, giving rise to fatal pyæmia. A strange sequel of rheumatic fever is *chorea* (Flint and Loomis).

Treatment.—Rheumatic patients should have good hygienic surroundings. The temperature of the apartment should range from 68° to 70° F.; all draughts should be avoided, and the

patient should be clothed in flannel and covered with flannel sheets. The *diet* should be milk and seltzer-water, beef-tea and broths. *Animal food* and *alcoholic stimulants* should not be given during the active period of the disease.

External Applications.—*Cold*, by means of ice-bags to the joints, has been strongly recommended. *Friction* with chloroform and the tincture of aconite is a favorite plan with some. "Hot-packs" by means of flannel, or bathing the joints in warm laudanum and then covering them with oiled silk, is always grateful to the patient. Ethyl chloride or ether may be rubbed over the affected joints. Loomis is of the opinion that the *blister-treatment* is no better than simply surrounding the joints with cotton-batting and oiled silk. But Dr. Greenhow finds that the blister-treatment is quite as successful as the treatment by salicylates, and open to less objection. The blistering-plaster should be applied about the inflamed joint, but not on it. Blisters relieve the pain remarkably, change the reaction of the urine from acid to neutral or alkaline, and prevent complications. Blisters may be utilized in all forms of the disease and combined with other plans of treatment.

Internal Medication.—Rheumatism is the most unmanageable of all diseases so far as remedies are concerned. Garrod thinks colored water is about as potent as anything. He claims that rheumatic fever is a self-limited disease. The *alkaline treatment* is the treatment in which alkalies play an important part. Two drachms of the bicarbonate of either potassium or sodium may be given in a state of effervescence by means of an ounce of lemon juice, or a half drachm of citric acid in four ounces of water every three or four hours. If the urine is alkaline at the end of twenty-four hours the quantity of alkali is diminished one-half. If the urine continues alkaline at the end of forty-eight hours, three drachms of alkali only are given on the third day. If the alkalinity of the urine persists, on the fourth day three grains of quinine with a half drachm of potassium bicarbonate may be given three times daily. Cathartics may be given as required. The alkaline treatment relieves the pain, seems to shorten the duration, lessens the violence of the disease and prevents heart complications. The average duration of the cases

thus treated is put by Dr. Fuller at eleven days. Of 439 cases subjected to this plan there was not a fatal case, and only about two per cent. of cardiac complications. Loomis thinks that if long continued the alkalies do positive harm. The alkaline treatment is particularly applicable to the obese, florid, but flabby drinkers of malt liquors. The *iron treatment* is applicable to the pale, delicate anæmic young subject attacked with acute rheumatism, in whom the alkalies are too depressing. A half drachm of the tincture of the chloride of iron to six ounces of water, may be taken through a glass tube every four hours.

The *salicylic* or *salicylate treatment* is most applicable to the vigorous, able-bodied subjects of the rheumatic diathesis. Salicin, salicylate of soda and salicylic acid, to be effective, must be given in sufficient quantity to lower the temperature—a half-drachm of salicylate of sodium every four hours, until the pulse and temperature decline, may be taken as the standard. Although relief follows the administration of these remedies in two or three days, yet the tendency to relapses, heart depression and irritability of the stomach is very great. The salicylate treatment does not prevent the heart complications. The best results are obtained by the combination of the salicylate and the alkaline treatment. Loomis prefers salol to salicylic acid. He seldom uses the *alkaline*, or *salicylate treatment*, but extols *antipyrine* as the most efficient drug. Flint gives antipyrine in fifteen grain doses hourly, but does not give more than two drachms in twenty-four hours. For the intense hyperpyrexia in some cases, large doses of quinine may be given and cold sponging practiced. Dr. Kinnicutt gives 10 to 15 minims of the oil of wintergreen every two hours until eight doses have been taken. DaCosta has reported 30 cases treated with the bromide of ammonium in doses of 15 to 20 grains every three hours (Bartholow, Flint and Loomis).

Subacute Articular Rheumatism.—Is usually a sequel of the acute; it is attended by slight if any fever; the pain in joints is not severe, except on motion; swelling and redness are slight and usually limited to one or two large joints. It may last six weeks or even four months. There is always anæmia. The

treatment is a milk diet, iron and cod-liver oil, a warm climate, and heat to the affected joints (Loomis).

CHRONIC ARTICULAR RHEUMATISM.

Is an affection of the articulations characterized by pain and stiffness, with some swelling, occurring chiefly after middle life, and influenced by atmospheric changes (Bartholow).

Causes. The chronic may succeed to the acute, or the case may be chronic from the first. It is a disease of adult and advanced life. Bad hygienic surroundings, exposure to wet and cold, sudden atmospherical changes, and a residence in dark and damp dwellings predispose to it. It is often hereditary (Bartholow and Loomis).

Symptoms. The affection remains *fixed* in certain joints; that is, it does not shift from joint to joint, as in cases of acute rheumatism. There is aching and constant pain in one or more of the larger joints. The affected joints are tender, painful to the touch, sometimes swollen, and their movements restrained. There is no fever. The aching and deep-seated pains are often worse at night. When it is the result of *exposure*, heat will give a grateful sense of relief; when a *rheumatic diathesis* exists, dry cold is better. Old people with rheumatic joints are great "*weather prophets*," often being able to foretell the coming of a storm. In the morning, on rising, the joints are stiff, their movements slow, rigid and jerking, so that dressing is accomplished with difficulty; but use renders them limber and supple. Movements of the joints may cause more or less creaking like rusty machinery (Bartholow, Flint and Loomis).

Differential Diagnosis.—Chronic rheumatism may be mistaken for *rheumatoid arthritis*, or *arthritis deformans*. In the latter occur anatomical changes, dislocations, and distortions which do not belong to the history of chronic rheumatism. Arthritis deformans is a steadily progressive disease, one joint after another being involved and never recovered from. In chronic rheumatism the large joints are mainly involved; in arthritis the small joints are usually first involved, then the large (Loomis).

Prognosis. Chronic rheumatism never affects the duration of life. It may persist throughout life (Loomis).

Treatment.—Chronic rheumatism is benefited most by local treatment, such as blisters, iodine, belladonna, aconite, opium and chloroform liniments. If there is but little pain in the joints, ammonia and turpentine liniments are of service. Thick flannels should always be worn about the joints. Sponging the joints with hot water will relieve the pain and stiffness in some cases. Warm baths, the Turkish or Russian baths, with local douches, are often highly useful. Many of the hot saline springs for bathing have acquired a great reputation in the treatment of this form of rheumatism, cures being effected in cases that had resisted all other methods of treatment. The best results are obtained from the baths of the Hot Springs of Arkansas, the warm and hot springs of Virginia, the sulphurous waters of Kentucky and Saratoga, the Michigan springs, and St. Catherine's of Canada. Mud-baths are also employed on a large scale, for the relief of rheumatism and affections of the skin, in certain parts of Germany. Frictions of the affected parts with cod-liver oil are efficacious. The method of friction and movements, known as *massage*, is probably the best of the local means of treatment. *Galvanism* has been found serviceable. The positive pole should be placed over the principal nerve-bundles above, and the negative pole brushed over the joint-region. The electrical treatment must be kept up for a long time.

Internal Medication.—Tonics such as iron, quinine, and strychnine should be employed. Cod-liver oil, according to Loomis, is the most useful of all internal remedies, and should be given for many months. Cod-liver oil should be given with a little ether to assist its digestion. A course of iodide of potassium often renders important service, if given many months. Muriate of ammonia may absorb deposits about the joints but it must be given for a long time. Bartholow has had excellent results from the bromide of lithium. Colchicum, arsenic, bichloride of mercury, guaiacum, oils of turpentine and cajeput, combined with sulphur have been recommended. The *diet* must be highly nutritious and absolutely non-stimulating. The patient should reside in a dry, warm climate (Bartholow, Flint and Loomis).

RHEUMATOID ARTHRITIS.

Called also *arthritis deformans*, *rheumatic gout*, *rheumatic arthritis*, *nodosity of the joints*, *dry arthritis*, etc., is a chronic inflammation of the joints, without fever and without suppuration, progressive, and causing enlargement and deformity of various articulations (Bartholow).

Causes.—It may occur at any age, but in the majority of cases patients are in middle life. Women are more liable to it than men. The smaller joints are most often involved in women; the larger in men. Damp dwellings, poor food, and mental depression are powerful predisposing causes. It is not an inherited disease. It occurs in the poorer classes of society, as a rule, and among those who suffer from hardships, exposure, and deprivations. Garrod holds that it may have its origin in the *tubercular diathesis*. A state of the nerve-centres is invoked to account for this disease (Bartholow, Flint and Loomis).

Symptoms.—The disease is usually from the first and during its course, sub-acute. A feature of the disease is its progressive character. There is usually no constitutional disturbance. The affected joints are painful, especially on motion. A characteristic deformity of the fingers is a lateral deflection in the ulnar direction. In the progress of the disease the anatomical changes lead to permanent extension or flexion of parts, subluxations, dislocations, nodulations and notable distortions. The soft parts about the joints usually atrophy. Early in the disease a friction crepitus is heard as the articular surfaces are rubbed upon each other. The skin is dry and harsh, and there is a great acidity of the stomach. In the worst cases all the joints are fixed in bony ankylosis (Bartholow, Flint and Loomis).

Differential Diagnosis.—*Arthritis deformans* may be confounded with *chronic rheumatism* and *chronic gout*. Gout is hereditary and occurs more in males. Arthritis deformans is rarely hereditary and occurs oftenest in females. Attacks of gout are periodic. Arthritis is progressive. Chalk-stones develop in the joints in gout and are never present in arthritis. Uric acid is always in excess in gout, and never in arthritis (Loomis).

Prognosis. It is one of the most chronic of diseases. It may continue for ten, twenty or thirty years or longer. It never des-

stroys life, and is never recovered from. Patients with this disease may attain very old age (Bartholow and Loomis).

Treatment.—Quinine, iron, cod-liver oil, arsenic and strychnine are indicated. Flannels should always be worn next the skin. Mineral waters and warm saline baths often do good. Bartholow recommends iodine and galvanism. He gives five minims of the compound solution three times daily. Iodine ointment may be rubbed into the affected joints. The galvanic current is often of great benefit (Bartholow and Loomis).

RANULA.

Is a sublingual cyst.

Cause.—Ranula is caused by an obstruction of one of the mucous glands situated beneath the tongue. They were once thought to be due to an obstruction of the salivary ducts. They are analogous to the mucous cysts of the lip. They contain a clear, glairy, mucoid fluid. They may be congenital. They may form a large swelling beneath the jaw. When large they press the tongue upward. They are, as a rule, painless, and merely give trouble by pressure (Bryant).

Treatment.—The best treatment is to raise the upper wall of the cyst by means of a pair of pointed forceps, or a tenaculum, and with scissors to cut it off. Panas, of Paris, has lately injected these cysts with three to ten drops of a solution of chloride of zinc (forty-five grains to the ounce) with success. In large tumors the cavity may be plugged with lint soaked in iodine, or with iodoform gauze, after it has been freely incised.

Encysted tumors are also met with beneath the tongue, and may be mistaken for *ranula*; but these tumors have a distinct capsule and contain a cheesy, sebaceous secretion. They are probably congenital (Bryant).

RETENTION OF URINE.

When a patient is unable to pass his urine, he is said to have retention. When no urine comes down from the kidneys, he is said to have suppression (Keyes).

Causes.—Stricture (organic or spasmodic), enlarged prostate, inflammation or acute congestion of the prostate, spasm of

the cut-off muscles, true vesical paralysis, urethral calculus and inflammation of the urethra are capable of producing retention. Voluntary retention, often repeated and long kept up, may result in retention. Blunted sensibility of the bladder in typhus, small-pox, coma, in some syphilitic and inflammatory brain diseases, in shock from injuries, and in all conditions of spasm of the deep urethral muscles, are causes. Excess of drinking, with or without exposure to wet and cold, is an exciting cause. Retention in a child is generally from stone impacted in the urethra; in an adult from stricture; and in an old man from prostatic disease (Keyes).

Symptoms.—The bladder may be often seen and felt, filling up the hypogastrium, perhaps reaching the navel. Pressure upon it usually causes a desire to urinate. Fluctuation may be made out between a finger in the rectum and the hand upon the hypogastric tumor. In retention there is always flatness over the pubes (Keyes).

Treatment.—In retention from *atony, paralysis, fever, etc.*, a soft catheter of medium size should be passed as often as required and the bladder should be washed out on each occasion with a hot solution of borax in water. A piece of ice about the size of a chestnut introduced into the rectum may relieve retention. In retention from *spasmodic stricture* caused by exposure to wet or cold and excess of drinking, the simple passage of a large metallic catheter well warmed and oiled is indicated. If the instrument will not pass *no force should be employed*, but an anæsthetic should be given and then it may pass. The old remedy of *a hot bath* cannot be too highly extolled in retention. *A full opiate* is also an invaluable remedy relieving the involuntary contraction of the bladder and the pain. In retention from *inflammatory stricture* caused by gonorrhœa, the passage of a small catheter, or a hot bath and a full opiate are the best remedies. In retention from a *blow in the perinæum*, the simple passage of a catheter will usually suffice. In retention from *pressure of an abscess in the perinæum*, the treatment is to open the abscess (Keyes and Bryant).

ROSEOLA.

Is a self-limited eruptive disease pursuing a course similar to measles. It is also called *rose-rash*, *false measles*, *German measles*, *rotheln*, etc. Modern German authors call this disease *rubeola* (Bartholow).

Causes. Roseola is contagious and is essentially a disease of childhood. The causes are in a measure obscure. The delicacy of the skin in infancy and the active cutaneous circulation no doubt predispose to roseola and erythema. Summer weather with the derangements of the system which it produces is the most frequent cause of idiopathic roseola in young children (Loomis and Smith).

Symptoms. Roseola is one of the mildest of the eruptive fevers. The eruption consists of rose-colored spots, varying in size from a pin's head to a large pea, slightly elevated, so that when the hand passes over the surface of the skin it feels somewhat rough. Sometimes these spots occasion intense itching, are quite distinctly separated by healthy skin, and disappear under pressure. The eruption is frequently the first symptom of the disease. There may be slight soreness of the throat and mild catarrh of the air-passages. The eruption usually commences upon or about the neck and face. It bears considerable resemblance to that of measles. There is no fever in a majority of the cases. The whole duration of the eruption is from two to four days. There is a *symptomatic roseola* which appears in the course of various acute febrile diseases with the exception of syphilis (Bartholow, Loomis and J. L. Smith).

Prognosis.—Is favorable.

Treatment.—Regulate the diet and keep the patient in-doors.

RELAXED UVULA AND PALATE.

Treatment.—Tannic acid is much employed in relaxed condition of the mouth and throat. Elongated and relaxed uvula, relaxed palate, and follicular pharyngitis are effectively treated by insufflation of tannin. In chronic affections of the larynx mucous membrane, and of the vocal cords, no inhalation is more

frequently serviceable than a solution of tannin (grs. x.-xx. to $\bar{\text{z}}\text{iv.}$) applied by means of the handball atomizer. In chronic inflammation of the throat when the mucous membrane is relaxed, swollen, granular-looking, and covered with mucons or pus, a few applications of glycerine of tannin brace up the tissues and lessen or remove the hoarseness (Bartholow and Ringer).

RASHES. (Medicinal).

The administration of certain drugs has a tendency to bring out eruptions which are likely to be mistaken for diseases of the skin. Some persons are peculiarly prone to them and we know not why. *Arsenic* produces an erythema or an urticaria in some persons, when given in large doses. *Belladonna* or *atropia* may produce a scarlet rash. *Bromides* produce a rash similar to acne when given for some time in full doses. *Quinine* may give rise to an erythematous eruption. In some persons quinine produces large patches of erythema, and always excites a violent urticaria. *Chloral hydrate* occasionally gives rise to a rash not unlike that of scarlet fever. *Opuntia* and *cubeba* produce a rash in some persons. *Iodine* and the *iodides* given for some time will produce a rash. *Opium* and *morphia* may produce an erythematous or urticarial rash which is very itchy. *Tar*, *creosote*, *carbolic*, *digitalis*, *stramonium*, *strychina*, or *salicylic acid* occasionally produce an eruption in those who are taking them (Anderson).

RESTLESSNESS.

Ringer says, that in several cases, he has seen aconite quiet the distressing restlessness of "fidgets," which affects men as well as women, and has known a few drops at bed-time calm the patient and give sound, refreshing sleep; if one drop is insufficient, it may be repeated hourly for three or four hours. Sponging with hot water will often induce perspiration, soothe the restlessness of convalescence, and induce sleep (Ringer).

RELAPSING FEVER.

Called also *febris recurrens*, *typhus recurrens*, *spirillum fever*, *five-day fever*, *seven-day fever*, *short fever*, *mild yellow fever*, *famine fever*, *hunger-pest*, and *dynamic fever*, is an acute, infectious, febrile disease, self-limited, and characterized by the occurrence of a febrile paroxysm, lasting about one week, succeeded by an entire intermission of four or five days' duration, which is in turn followed by a relapse like the first seizure, although shorter. It has never been indigenous in this country. It is by no means a new form of disease. Accounts in the writings of Hippocrates leave no doubt but it prevailed 2,000 years ago in the islands off Thrace. It has prevailed as an epidemic disease in most of the countries of Northern Europe. In 1844 there were fifteen cases of relapsing fever in Philadelphia. The patients were Irish immigrants, all coming over in the same vessel. Dr. Dubois reported a few cases in 1848, and Dr. Flint fifteen cases in 1850-51. All these were among recent Irish immigrants. It prevailed as an epidemic in New York City in 1872-3, the disease having been imported by foreign immigrants. In 1865 there was a great epidemic in St. Petersburg. The name *relapsing fever* is to be preferred to any of the other appellations, as it is based on one of the most striking of the peculiarities of the disease (Bartholow, Flint and Loomis).

Morbid Anatomy.—The lesions are those of an acute infectious disease. The spleen is enlarged, due to congestion and hyperplasia of its lymphoid elements. The liver is also enlarged and is the seat of parenchymatous degeneration. The kidneys are swollen. The mucous membrane of the intestine is inflamed. Petechiæ of the skin are present in about 10 per cent. of the cases. The myocardium may be affected with a fatty degeneration almost as intense as that in phosphorus-poisoning. The blood is dark and coagulates imperfectly. In 1873 Obermeier discovered a spiral-shaped bacterium in the blood of relapsing fever patients. This parasite has been found in the blood in no other disease (Flint).

Causes.—Relapsing fever is a distinctly contagious affection. The poison acquires the greater activity the more filthy, crowded

and unhealthy the population amid which it prevails. Articles of clothing will retain the contagious principle for a long time, and those who have been in the presence of the sick can convey the poison to the healthy at a distance. Drinking water may be contaminated and spread the poison. The disease attacks by preference the young, the liability lessening after thirty and apparently ceasing after fifty. One attack does not afford immunity against subsequent attacks. The natural home of relapsing fever is Ireland. The period of incubation ranges between five and seven days, rarely nine. Facts go to show that it is not a highly contagious disease. Considerable exposure is generally necessary. The disease is not likely to be contracted from single patients in well ventilated rooms. Destitution and deficient alimentation are auxiliary causes. That the contagium is contained in the blood does not admit of doubt. In accordance with the germ theory, the first paroxysm of relapsing fever is due to a brood of *spirochaetæ*. Their existence terminates in about a week, as a rule, and the first febrile paroxysm then ends. The germs remaining in the body give rise to a second brood and there is the relapse of the fever. In rare instances a third and a fourth brood are produced. The contagium is probably contained in the breath and the cutaneous exhalations (Bartholow, Flint and Loomis).

Symptoms.—The recurrence of the paroxysm of fever, or the relapse, is the distinctive feature of this disease. The attack is sudden. It is marked by a distinct chill with fever, frontal headache, vertigo, pain in the limbs, joints and back and usually nausea and vomiting. Sweats may, at first, follow the chills. The vomit consists first of the contents of the stomach, then of a yellowish material and this may be followed by black vomit similar to that of yellow fever. The temperature usually attains its highest point within the first twenty-four hours—104° F. to even 109° F.; and the pulse reaches 140, 150, or even 160 beats per minute. The cessation of the fever is as abrupt as its invasion. The duration of the primary paroxysm in the majority of cases is between five and seven days. It may be two or fourteen days. The average duration of the *apyrexial period* or intermission is about seven days. The relapse, like the primary attack,

is sudden, with chilly sensations, fever, etc. The relapse also ends suddenly with profuse sweat. The duration of the relapse varies between three and five days. It may be one or ten days. The relapse does not always occur. But two, three, four, and even five relapses have been observed. The duration of the second intermission is eight or nine days, and that of the third paroxysm about three days. The duration of the disease averages about twenty-five days. The tongue is coated and soon becomes very dry and sore. Herpes labialis may occur. Epistaxis is frequent. There may be diarrhœa or constipation. Meteorism is common. Tenderness in the epigastric and iliac regions on pressure is common. Jaundice is developed in some cases. A dirty, yellowish color of the skin is present in most cases.

During the first paroxysm, pains in the loins, the calves of the legs, and the muscles in other situations are generally much complained of. They are never wanting. The muscular pains do not cease with the ending of the paroxysm, but continue during the intermission. They are more or less prominent during the relapse. The pains are sometimes referred to the bones. The mind is clear. The perceptions are not blunted in this disease as they are in typhus and typhoid fever. There is no coma-vigil, no subsultus and no carphologia. There is no characteristic eruption. Sudamina or miliary vesicles, sometimes are observed when profuse perspiration occurs. The face is more or less flushed but there is not that degree of capillary congestion, marked especially on the cheeks which exists in typhoid fever or the dingy complexion which characterizes typhus. Relapsing fever, when it attacks pregnant women, always leads to miscarriage or abortion. The patient goes on from day to day gradually getting worse; the fever becomes more and more intense; loss of strength and emaciation are progressive and the muscular pains are more severe; when on the seventh day of the fever a remission suddenly occurs. (Edema of the feet due to general anæmia is often quite marked during convalescence. Recovery is tedious (Bartholow, Flint and Loomis).

Differential Diagnosis.—Relapsing fever may be confounded with typhus, typhoid, yellow fever, small-pox and measles. In *typhus*, the dusky face, contracted pupils, absence of all abdom-

inal pain, peculiar smell, stupor, apathy of mind, and the pathognomonic eruption on the fifth or seventh day will be sufficient to distinguish it from relapsing. In *typhoid* the slow invasion, the "step-ladder" rise in temperature, the eruption and the characteristic diarrhoea will distinguish it from relapsing. In *yellow fever* the pulse is rarely over 110, the spleen is normal and only a remission occurs. In *small-pox*, the eruption appears on the third day. In *measles* the eruption follows a common cold in the head. Of course the prevalence of relapsing fever will assist the diagnosis (Loomis).

Prognosis.—Is always good. About three per cent. of the cases die. Sudden syncope is the greatest danger (Loomis).

Treatment.—Dr. Ratty stated more than a century ago that all those cases of relapsing fever which were abandoned to *whew* and the good providence of God recovered. Loomis would give very little medicine in this disease. If there is any evidence of heart-failure, he would give digitalis and stimulants, with milk diet and free ventilation. For the pains, Bartholow advises morphine hypodermically; and for the nausea, half a grain of carbolic acid in cherry-laurel water. Tonic remedies are indicated.

SALIVATION.

Is harmful and should not be aimed at. The greatest effect that it is allowable to produce by mercury is to "touch the gums." When the gums are touched there will be an increased flow of saliva, a faint coppery taste in the mouth, and some tenderness of the gums, tongue and mouth (Keyes).

Causes.—The cause of salivation is special idiosyncrasy with a small dose of mercury, or no idiosyncrasy with large doses. A mouth kept dirty or containing bad teeth is more apt to suffer. The influence of cold and wet during a mercurial course may produce it (Keyes).

Symptoms.—In salivation, the salivary fluids flow freely, sometimes to an enormous extent; the breath is fetid, the metallic taste is very marked; the gums are sore; the teeth feel too long for the patient to shut his mouth; the tongue swells, showing marks of the teeth, and the lips and cheeks may also become

tumefied. Often there is fever. The teeth may fall out, or portions of the soft or bony parts necrose. The articulation is indistinct and painful and deglutition almost impossible (Keyes).

Treatment. During salivation, or any sore mouth from mercury, ten to twelve grains of chlorate of potash to the ounce of water, or any bland fluid, may be used as a mouth wash and gargle. At least one drachm of chlorate of potash should be taken by the stomach daily. A mild solution of carbolic acid, or of permanganate of potash, should be occasionally used as a gargle where there is great fetor of the breath. The free use of the hot bath is of advantage, and a mild diuretic may be given. A little tincture of belladonna may be given to restrain the salivary flow. Astringent gargles, Labarraque's solution, tincture of myrrh, hot milk, cold tea may be used as mouth washes (Keyes). Alcohol diluted with water may be used as an astringent gargle in salivation. Bromide of potassium checks the salivation sometimes occurring in pregnancy. A gargle of two drachms of tincture of iodine to eight ounces of water has been recommended to allay mercurial salivation (Ringer).

SATYRIASIS.

Is constant desire with erection; erotic delirium. It is also a brain disease. Acton mentions the case of an old man who was eminently satyriasic, so much so that he would masturbate in the presence of ladies. Dying, a tumor of the size of a split pea was found in the pons Varolii (Keyes).

SCABIES.

Called also "*the itch*," is a highly contagious disease, especially in persons who are inattentive to cleanliness. It is communicated by sleeping with, or on the beds of those who are affected, or by coming much in contact with them in any way. It may also be transmitted from the domestic animals, such as the cat. It is oftener met with in winter than in summer (Anderson).

Causes.—The cause of "*the itch*" is an animal parasite, called *acarus scabiei*. This burrows into the skin particularly

between the fingers and toes, about the wrists, on the buttocks, abdomen, and the upper part of the penis (DaCosta).

Symptoms. The disease is attended with excessive itching, which is increased at night, and with an eruption usually due to the irritation of scratching. At the close of our civil war we had a form of itch very prevalent in this country, the so-called *army itch*, which was a very chronic affection and no age or social state was exempt from it. The itching was intense (DaCosta).

Treatment. Scabies can be easily cured. The treatment should be exclusively local. The indications are: 1. To destroy the acari and their eggs. 2. To do so without irritating the skin. 3. To remove the eruptions called forth by the scratching. At the Glasgow Hospital for skin diseases, each patient affected with scabies, is told to scrub the *whole* of his body (except the head) as firmly as possible with black soap and water, and to sit in a hot bath for twenty minutes; also to rub some of the ointment given him firmly into the skin of the whole body (except the head) for twenty minutes. Let the ointment remain on the body all night. Repeat these processes every night for three nights, *but no oftener*. Besides the above, he is ordered to put all his washing clothes into boiling water, and to iron all others with a hot iron. The best parasiticide in this disease is *sulphur*; but it is apt to irritate and inflame the skin. Anderson prefers an ointment of *stearax*, for it not only kills the acari, but also has a pleasant aroma, and rather soothes than irritates the skin. Burchard strongly recommends the use of balsam of Peru. One thorough application to the dry skin is sufficient, or the balsam may be diluted with two parts of lard and applied oftener. Lard may alone effect a cure if applied for two weeks.

SCARLET FEVER.

Called also scarlatina, is an acute infectious and contagious disease, self-limited, characterized by a peculiar exanthem, an affection of the throat and albuminuria, and terminating in desquamation of the epidermis. This name has been given on account of the bright red appearance of its eruption. It is a disease of childhood, but may occur at any age (Bartholow and Loomis).

Causes.—The cause of scarlet fever is a contagion, a micro-organism, which is transferable from the sick to the healthy. No specific microbe of the disease has as yet been discovered. It occurs both in the sporadic and epidemic form, but never arises spontaneously. It may be conveyed by contact, through the atmosphere, by animals, and by clothing; it is therefore a portable disease. An epidemic of scarlet fever has been traced to the milk supply. Quain says: "Milk is a great medium for carrying scarlet fever, and cream even more than milk often carries it from the sick to the well." The susceptibility to scarlatina is not universal. Some seem to have a certain idiosyncrasy which prevents them from contracting the disease. Scarlet fever can be communicated from one individual to another by inoculation with the serum from a minute vesicle on the skin of a scarlet fever patient. But those who have been inoculated for scarlet fever have suffered more severely than those who contracted the disease in the ordinary way. The scarlet fever poison can be conveyed by clothing, but when a physician makes a visit of ordinary length, he is not likely to so convey the disease. Nurses who have been with a scarlet fever patient for a number of days and whose clothing has become filled with the poison, may carry the disease. The poison is probably contained in the skin and its excretions and epithelium and also in the breath and exhalations from the throat. The period at which the disease is most infectious is probably the highest point of the disease; but it is present at any period from the beginning to the end. The disease but rarely occurs twice in the same individual; although it may *recur* from one to three weeks after the close of the first attack and is then described as a relapse. The period of incubation varies from one to fourteen days, the average duration being from three to seven days. The shortest period is that of a patient mentioned by Trousseau, in whom the disease appeared in a day after exposure. Within the first six months of infant life there is little liability to the disease; but the greatest susceptibility to the influence of the poison exists between the second and seventh years, and declines slowly to the tenth, and after this more rapidly; but it does occur in old age. Those who have just undergone

surgical operations seem to be especially prone to contract the disease. Women during convalescence after child-birth are very liable to contract scarlet fever.

Contagiousness. The area of the contagiousness of scarlet fever is small; it apparently embraces only a few feet. It is not so contagious as pertussis, variola, varicella, or measles.

Variations in Type.—The type of scarlet fever varies greatly in different epidemics. One child may have it so mildly that little treatment is required; while another has the malignant form, and soon succumbs (Bartholow, Flint, Loomis and J. L. Smith).

Morbid Anatomy. It has no characteristic anatomical lesions except those which occur in the skin and mucous membranes. The eruption is due to an intense hyperemia, which is limited to the area of the spots, but which is general when the spots coalesce (Bartholow and Loomis).

Symptoms. There are three stages of scarlet fever: *First*, the stage of invasion. *Second*, the stage of eruption. *Third*, the stage of desquamation. *The period of invasion* is sudden and violent. A strong chill is the initial symptom in adults; in children there is a violent convulsion, or a severe attack of vomiting, with prostration. Headache of a very intense character, general muscular pains and high fever succeed to the chill. In a short time the temperature rises to 104°, 105°, or higher; the skin is hot; the throat burns and is red and swollen; the tongue is coated. The affection of the throat is due to the efflorescence which appears in this situation before its appearance on the skin. Epistaxis is common. The average duration of this stage is about twenty-four hours, and the eruption usually appears on the second day. It may appear earlier or later.

Stage of Eruption.—This stage in children is sometimes ushered in by a transient convulsion. The eruption appears on the neck and upper part of the chest first, and then on the cheeks and forehead. The first appearance is in the form of minute red dots or specks, and these may coalesce and form a solid redness. Exceptionally, the eruption remains punctiform, that is, in the form of distinct macule or spots. The redness is vermilion or scarlet. It is not uniform like erysipelatous redness, but on close

inspection the patches are seen to be studded with points. The redness momentarily disappears on pressure, and white lines are produced by drawing a pointed hard substance over the reddened surface. In some cases the whole cutaneous surface is covered with the efflorescence presenting an appearance which has been compared to that of a boiled lobster. The integument is slightly swollen. This is evident of the face and is apparent to the patient when the hands are closed. The feet are swollen. The eruption is sometimes accompanied by more or less burning and pruritus. The eruption attains its maximum of intensity and diffusion on the third day after its first appearance. In certain cases the eruption may be slight or wanting.

The throat is more or less affected in the vast majority of cases. The tongue is coated early, and while the coating remains, frequently the papillæ projecting through it have the appearance of a number of red points. In the progress of the disease, the coating exfoliates, leaving the surface of the tongue clean and reddened; and the papillæ being enlarged, the appearance is strikingly like that of a ripe strawberry. The strawberry-like tongue is a pathognomonic symptom, and is peculiar to this disease. The *pyrexia* is not diminished, but, as a rule, is increased after the appearance of the eruption. The pulse is frequent, from 100 to 140 or more, is quick and always compressible, and is never dicrotic. The skin usually is dry and the heat as felt by the hand is often pungent. The thermometer in the axilla shows an increase of temperature to 105° F. and in severe cases it may reach 112° F. The duration of the stage of eruption in the majority of cases is between four and six days.

Stage of Desquamation.—With the disappearance of the rash, desquamation commences. The period of desquamation lasts about two weeks, during which time there is the greatest danger of communicating the disease. At the end of this period, if no complications occur, the patient is well. Where the skin is thick, as on the palms and soles, the epidermis peels off in extensive patches. The entire period of scarlet fever when it runs its regular course is from two to three weeks.

Scarlet fever is liable to irregularities. In a certain class of cases, complications arise from the overwhelming of the cere-

bro-spinal system with the scarlatina poison. In these cases there are delirium, stupor, restlessness, wandering, and picking at the bed-clothes. *The most common sequel of scarlet fever is albuminuria with general dropsy.* This follows the disease in a considerable proportion of cases. The time of its occurrence is between ten and twenty days after the date of desquamation. The symptoms are those of acute diffuse nephritis. Oedema of the face and lower extremities is first observed, and anasarca frequently follows. Effusion sometimes takes place into the serous cavities. The urine is scanty; sometimes it has a smoky appearance, and it may be distinctly bloody. It is usually loaded with albumin. Uremic coma and convulsions, pulmonary oedema, and oedema of the glottis are grave accidents incident to the renal affection. Acute nephritis after scarlet fever rarely ends in chronic renal disease. Pleuritis, pericarditis, and acute articular rheumatism are occasional sequels as well as concomitants of scarlet fever. Chorea, external otitis and otitis media are sequels in some cases. A purulent discharge takes place from the ears, and sometimes there is considerable deafness. A serious complication of scarlet fever is diphtheria (Bartholow, Flint, Loomis and J. L. Smith).

Differential Diagnosis. Scarlet fever may be mistaken for *measles*, *small-pox*, *roseola* and an *erythema* which sometimes appears in surgical cases. In *measles* the appearance of the eruption is preceded by a cough and coryza, not so in scarlatina. Besides, the eruption of measles first appears on the face, whereas the eruption of scarlet fever first appears on the neck and chest. The incubation period is shorter and fever higher earlier in scarlet fever than in measles. In *small-pox*, the eruption, if confluent, may resemble that of scarlet fever for the first twenty-four hours yet the development of the first vesicle settles the question. In *erythema* the redness spreads in a very irregular manner, and the throat symptoms and strawberry-like tongue of scarlet fever are absent. In *roseola* the throat affection is much milder than in scarlet fever. In *roseola* the white line that the finger leaves disappears immediately, while in scarlatina it remains (Loomis and Flint).

Prognosis.—Is always uncertain in scarlet fever. The rate of mortality ranges from one death in five to one in twenty. The conditions of a favorable prognosis are early eruption, mild throat symptoms, a temperature not higher than 104° F., pulse not above 120 and mild cerebral symptoms. Autumn is the most unfavorable season. Malignant cases of scarlet fever in which no eruption appears, prove rapidly fatal. The patient is overwhelmed by the scarlatina or active blood poison. The period of greatest mortality is from infancy to five years of age (Loomis).

Treatment.—*I. Prophylaxis or Prevention.*—The prophylaxis of scarlet fever is a system of the strictest quarantine. The sick must be removed from the healthy. Fresh air renders the contagion of scarlet fever less powerful; therefore, free ventilation is of the utmost importance. All the clothes and excretions of the patient, the nurse and everything contaminated by the contagion should be disinfected. The funeral of those dying of scarlet fever should not be public. The sick should not be allowed to leave their apartment until desquamation is completed. Belladonna has no power to prevent this disease, as was once thought.

II. Medicinal Treatment.—The medicinal treatment of scarlet fever is almost entirely expectant. It is a disease which cannot be aborted, but tends to recovery. The bed and body linen should be frequently changed. The patient should be bathed with warm water once or twice daily during the period of desquamation. The baths will relieve the kidneys by keeping the skin active. If the temperature of the patient rises above 104° F., it should be reduced by some means. Loomis says, "Unless the temperature in a case of scarlet fever ranges above 105° F., do not apply cold to the surface or give antipyretics."

In all cases the patient is to be sponged frequently with tepid water, and if there is intense burning of the surface, a saline is to be added to the water. Sponging in this manner will give the patient very great comfort. Of all the remedies which Loomis has employed for the throat complications, cold carbonic acid water or pieces of ice afford most marked relief. In the advanced stages of the disease, hot applications may be used extern-

ally to the neck and warm water gargles and steam inhalations internally. For the ulcers sometimes seen in the throat of scarlet fever patients, a spray of carbolic acid, tincture of iron, chlorate of potash, or tannic acid may be used. Stimulants may be given early if there is much depression. Whenever kidney symptoms are developed, dry or wet cups should be applied over the region of the kidneys, upon either side of the spine. At the same time the temperature of the sick-room is to be raised to 73° or 74° F., the body of the patient covered with flannel, hot-air or warm-baths are to be given and also diuretics. Of the diuretics, digitalis will act most favorably. Small doses of calomel may be combined with the digitalis and continued for two or three days. The patient may drink water freely. If convulsions occur, opium may be given (Loomis).

SCLEROSIS OF THE BRAIN.

By the term *sclerosis* is meant a disease characterized by the formation of isolated patches or nodules of sclerotic tissue (hardened tissue). We have sclerosis of the liver, of the kidney, of the lung, of the brain and spinal cord, etc.

Independent of *cerebro-spinal sclerosis*, this is a comparatively rare condition. *Cerebral sclerosis* is a chronic interstitial inflammation, following hyperæmia of the neuroglia. It may be diffused or multiple (Loomis).

Morbid Anatomy. *On section*, masses of gray, hard, well-defined, transparent sclerotic tissue are found, varying in size from one-fourth to one inch (Loomis).

Causes.—Are obscure. It is intimately connected with changes in the *vascular system*. Sclerosis of the brain is often found in epileptics and in the insane (Loomis).

Symptoms.—Are a gradual enfeeblement of the mental powers, especially *memory*, muscular tremors, headache, dizziness and vertigo. One group of muscles after another becomes paralyzed. Melancholia, pains in the extremities, and a sense of formication are common. Patients may gain flesh with this disease. Strabismus may be present. A peculiar symptom is *festination*—the patient bends forward and trots along like one

trying to run after he is tired out. In rare instances the first symptoms are convulsions of an epileptiform character, followed by hemiplegia (Loomis).

Differential Diagnosis.—Sclerosis of the brain may be confounded with *cerebral softening*, *paralysis agitans* or *tumors*. *Softening* occurs in old age; sclerosis occurs from youth to middle age. The paralysis in *softening* is in one set or group of muscles, and if it extends, does so in an orderly manner. There is *anæsthesia*, and the symptoms develop more suddenly than in sclerosis. *Paralysis agitans* is marked by rhythmic tremor passing from one upper to the corresponding lower limb; there is a peculiar deformity of the fingers and toes; the facial muscles are not affected, and the patient inclines to the paralyzed side in walking. Paralysis agitans occurs only after the fortieth year, and is accompanied by *no cerebral symptoms*. *Cerebral tumors* are attended by headache, convulsions and signs of brain irritation without loss of mental power (Loomis).

Prognosis.—Sclerosis of the brain may continue from five to eight years, but it is progressive and always fatal (Loomis).

Treatment.—Little can be done for this disease except to improve the general health. Vulpian recommends chloride of iron, Mitchell the bi-chloride of mercury, Hammond the chloride of barium and many the phosphate of zinc. Nitrate of silver and strychnia are said to relieve tremor (Loomis).

CEREBRO-SPINAL SCLEROSIS.

Is a disease characterized by the formation of isolated patches or nodules of sclerotic tissue (hardened tissue) in the brain, pons, medulla, cerebellum and spinal cord (Bartholow).

Morbid Anatomy.—The disease in the brain and cord to the naked eye, appears as glistening nodules underneath the pia, varying in size from a minute object to that of a walnut (Bartholow).

Causes.—The exciting causes are damp and cold, sudden chilling of the body, traumatism, severe, long-continued brain work or physical exercise, powerful and prolonged moral emotion, chagrin and anxiety. The most powerful predisposing

cause is heredity. Continued jarring of the body is also thought to produce the disease. It occurs in nervous people with hysteria and after acute febrile diseases. It is essentially a disease of early life, few cases occurring outside the limits of fifteen and thirty-five (Bartholow and Loomis).

Symptoms.—It may be insidious or sudden in its development. If it come on insidiously, the patient complains vaguely of headache, vertigo, muscular weakness, mental disturbances, and queer feelings as formications, itchings, burnings, etc., in the limbs. There are nausea, vomiting, cardialgia, loss of co-ordinating power, and impairment of the special senses. There is more or less paresis in the extremities, and *shaking tremor* when an attempt is made at voluntary motions. In some cases the patient becomes childish or morose. During prolonged fits of yawning, sobbing, or laughing, the *respirations become stridulous*. The patient talks in a low monotone or whisper, dividing his words in syllables, and empassizing them as when scanning a line of poetry. A girdle pain is felt about the abdomen. Amblyopia, nystagmus, diplopia, and inequality of the pupils evidence invasion of the base of the brain and optic tracts. In the advanced stage acute bed-sores, loss of sexual power and control of the sphincters become marked symptoms (Bartholow and Loomis).

Differential Diagnosis.—Cerebro-spinal sclerosis may be mistaken for *paralysis agitans*, *locomotor ataxia*, and *cerebral hemorrhage*. In *paralysis agitans* the fine tremor exists when the patient is at rest, and is not accompanied by shaking of the head; while in sclerosis the head is always involved, the symptom ceasing as soon as the patient is at rest. Paralysis agitans is rare before forty; and multiple sclerosis is rare *after* thirty-five. Changes in the voice and speech and ocular symptoms are present in disseminated sclerosis and absent in paralysis.

In *locomotor ataxia*, the peculiar tremor, impairment of voice and speech, and nystagmus that belong to disseminated sclerosis are absent. In the former disease we notice the peculiar iron-band sensation, vesical symptoms, the Meniere's vertigo, the very slow and late appearance of parietic symptoms, the lightning like and agonizing neuralgic pains, and the peculiar double beat in

walking, the heel being put down first, all of which are in marked contrast to the symptoms of multiple cerebro-spinal sclerosis. When sclerosis is ushered in by loss of consciousness which rapidly deepens into coma, with marked hemiplegic symptoms, it may be mistaken for *cerebral hemorrhage*; but in sclerosis the temperature is very high during these peculiar attacks—104° or 105° F.,—the hemiplegia passes off soon (Loomis).

Prognosis.—The average duration of this disease is five to ten years. The termination by death is the only one known. After six or seven years emaciation sets in, a marasmus is developed, and the patient is apt to die from intercurrent disease (Bartholow and Loomis).

Treatment.—Improve the nutrition. Chloride of gold, phosphate of zinc, nitrate of silver, chloride of barium, potassium, iodide and bromide, arsenic, belladonna, calabar bean, and ergot have all been used with some success. The galvanic current benefits in some cases. For the pain morphine should be given (Bartholow and Loomis).

SCROFULA.

Is a constitutional dyscrasia, hereditary or acquired, characterized by changes inflammatory and hyperplastic, occurring for the most part in the lymphatic system, the skin, mucous membranes, connective tissue, osseous structures and viscera. *Scrofula* is also known as *struma*, the *strumous diathesis*, *tuberculosis*, the *tuberculous diathesis*. Scrofula is a disease chiefly of infancy and childhood, but early adult life is not entirely exempt. Scrofulous persons are liable to chronic inflammations of the lymphatic glands, especially those of the neck, which enlarge, often coalesce with each other, and undergo cheesy metamorphosis (Bartholow, Loomis and Smith).

Morbid Anatomy.—The characteristic lesions of scrofula are to be found in the lymphatic glands, although the skin, mucous membranes, bones, joints, and organs of special sense may be involved. Anæmia necrosis or suppuration sometimes occurs in the glands. On the skin the lesions appear as eruptions. Impetigo of the eyelashes and external otitis are common strumous

diseases. Scrofulous inflammation of mucous membranes is marked by a thick, sticky exudation with a tendency to form scabs. The bones most frequently involved are those of the ankle, lower part of the femur, and the vertebrae. The scrofulous development may assume the form of synovitis, osteitis, periosteitis, or general arthritis. A pharyngitis often gives rise to hyperplasia of the tonsils (which are lymphatic glands) in scrofulous individuals (Loomis).

Causes.—Scrofula is congenital or acquired. The children of intemperate, phthisical, syphilitic, cancerous and very old or very young parents, develop early all the characteristic features of the scrofulous diathesis. Children of consanguineous marriages are especially liable to scrofula, and to this has been attributed the scrofula of royal families. Healthy children may acquire scrofula through antihygienic surroundings, from improper food, overcrowding, lack of fresh air, exercise and sunlight. In the infant scrofula is sometimes produced by insufficiency or poor quality of the breast-milk, or too protracted nursing at the breast. Some think that scrofula is a local tuberculosis from the fact that scrofulous glands sometimes contain the tubercle bacillus. Birch-Hirschfeld found tubercles in nine out of ten lymphatic glands removed from the necks of scrofulous patients. Others think that the tubercle bacillus found in scrofulous glands is accidental. Rabl tabulates 1,000 cases of scrofula as regards the causation, as follows: 79 had scrofulous parents, 446 had tuberculous parents, 356 lived in damp dwellings, 25 were subjected to other bad hygienic surroundings, 69 could be ascribed to acute infectious diseases, such as small-pox, measles, scarlet fever, etc., 14 to vaccination, 7 to decrepitude and 4 to consanguinity of parents. Rabl also expresses the opinion that in certain cases scrofula results from syphilis in the parent or grand-parent. He believes that syphilis in the parent causes scrofula in the child by diminishing the power of resistance to the causes which produce the latter affection. He thinks that in this matter parental syphilis gives rise in some children to symptoms identical with those of scrofula, while in other children it gives rise to syphilitic symptoms. Dr. J. L. Smith is of the same opinion (Bartholow, Loomis and J. L. Smith).

Symptoms.—Some children with a scrofulous habit have a transparent, white skin, with delicate blue veins; large, lustrous eyes; bright red lips, etc. Others may have large heads with coarse features, a thick skin, which has a flabby, spongy feel, an enlarged abdomen, and cervical glands. Chronic inflammations of the skin about the face and scalp are frequent. Coryza, conjunctivitis, otorrhœa, laryngitis and bronchitis are persistent. Synovitis may appear. A slight injury may be the starting point of caries and necrosis. Glandular enlargements are the most common symptoms. This enlargement, which is non-inflammatory and due to cellular hyperplasia, is very gradual, and forms a smooth, firm tumor. These glands may inflame and suppurate. The disease progresses slowly, but toward puberty pulmonary disease is apt to be established (Loomis and Smith).

Prognosis.—Is good when the patient is seen early. Scrofulous children may die from tuberculous intestinal disease, acute hydrocephalus or croup.

Treatment.—The diet should be nutritious and easily digested. Cod-liver oil should be given daily during the greater part of infantile and adult life. The syrup of the iodide of iron should be given in one to two-drop doses three times daily to a child of six months, and five drops to a child of four years. The following is a good formula:

R Olei morrhue..... $\bar{3}$ iv.
Syrupi calcis lactophosphatis.....
Aquæ calcis—aa..... $\bar{3}$ ij.—M.

Sig.: One teaspoonful to a dessertspoonful four times daily.

—Smith.

Fresh air, outdoor exercise and daily bathing are necessary. Farm-life, sea-air and sea-bathing have been found efficacious. The following is a useful iodine mixture for external application:

R Liquor iodini composita.....
Glycerinæ—aa..... $\bar{3}$ j.—M.

Sig.: To be applied over the gland as an inunction.

The synovitis or strumous arthritis must be treated appropriately when it occurs. When it occurs in two or more joints, it may be mistaken for rheumatism (Loomis and Smith).

SCURVY.

Called also *scorbutus*, is a chronic blood disease, which may be regarded as a peculiar form of anemia arising from deficiency of vegetable diet. This disease appears to have been known to the ancients. During the last five or six centuries it prevailed very extensively in armies and among crews of sailing vessels, and hence it was called sea-scurvy. It prevailed enormously in the English and French armies in the Crimean War, and also in the late Civil War in our own country (Flint and Loomis).

Causes.—Deprivation of fresh vegetable food for a long time will very surely induce scurvy. It is rarely met with from any other cause, although an unvaried diet of poor quality may induce it (Loomis).

Symptoms.—The skin of the face and eyelids changes color and appears bruised and swollen. The pulse is soft and the temperature lower than normal. There is great despondency and a sense of weight in the lower limbs. The skin is dry, rough and of a muddy pallor. The conjunctivæ are pearly white, the tongue is clean and pale, the teeth loosen and are surrounded by bright red ulcerated and spongy gums which bleed upon the slightest provocation. The breath is exceedingly offensive, frequently from necrosis of the jaws. Ecchymoses and petechial spots cover the body. Severe darting pains are felt in the limbs, about the calf of the leg and the popliteal space. Node-like swellings occur over the tibia. Slight exertion may occasion palpitation, dyspnoea, and even syncope (Flint and Loomis).

Differential Diagnosis. Scurvy may be mistaken for *mercurial poisoning* and *purpura*. The history of the case and a close inspection of the gums will enable one to distinguish scurvy from mercurial poisoning. Scurvy is distinguished from purpura by the spongy gums, painful swellings, and more profuse though less numerous hemorrhages. Purpura is not affected by lime juice, or change in diet, while scurvy is (Loomis).

Prognosis. Scurvy is not a fatal disease, if uncomplicated, and appropriate treatment applied. It was the cause of death in a large proportion of those who died during the potato famine in Ireland (Loomis).

Treatment.—In long sea-voyages or campaigns lemon or lime juice or citric acid should be taken daily when fresh or preserved vegetables cannot be obtained. By their use in the English navy, scurvy has been diminished nearly ninety per cent. Orange-juice is also an effectual antiscorbutic. One of the most efficient of antiscorbutic vegetables is the potato. It is most efficient when eaten raw. Pickles, onions, raw cabbage or sauerkraut, the water-cress, green corn and green apples are valuable antiscorbutics. One who is seriously ill of scurvy should be kept in bed, and his diet should be fresh vegetables and acid fruits with fresh meats. Three or four ounces of lime or lemon juice largely diluted with cold water should be taken daily. Tincture of the chloride of iron and ergot are given to arrest hemorrhage. Whiskey may be given when indicated. To arrest local hemorrhage, alum, tannin, subsulphate of iron and the chloride of iron are most useful. A wash of chlorate of potash will afford relief to the mouth symptoms. Quinine, iron and strychnine act both as tonics and appetizers (Flint and Loomis).

SEA-SICKNESS.

Is a peculiar form of functional disturbance of the nervous system characterized by severe depression and persistent nausea and vomiting (Loomis).

Causes.—Sea-sickness is most commonly the result of the motion of a ship, but it may be the result of any unusual motions to which the person is unaccustomed, as the motion of a swing or an elevator. Waltzing, riding backwards, turning a somersault, or the sudden jerk of a railroad train as it starts or stops may each produce a similar condition. In some persons, a mild form of sickness may be produced by simply watching oscillating objects. Some persons never suffer, while others are unable to endure the slightest motion on the water or elsewhere. The nerve centres are embarrassed, and the resulting nervous irritation manifests itself through vaso-motor disturbances in precisely the same manner as is seen when persons blush under embarrassing circumstances, or pale when startled (Loomis).

Symptoms. Seasickness usually presents the two stages of *first*, depression and exhaustion, and *second*, reaction. It begins with a sense of weight and epigastric oppression, occurring only during the rapid rise and fall of the vessel. It speedily becomes continuous and is accompanied by vertigo and headache. Nausea is always most intense and at the same time the vomiting is often sudden and projectile, as in cerebral vomiting. The appetite is entirely lost. The mental depression is great. In the majority of cases this condition continues from three to five days, provided the voyage is of that length during which time the nausea, vomiting and mental depression continue and is then followed by *reaction*. There is now a ravenous appetite and a feeling of well being. In some cases the stage of depression lasts for weeks, and the patient may pass into a stage of partial collapse and coma (Loomis).

Prognosis. It is very rarely fatal, but occasionally a condition of collapse develops which, if not assiduously treated, may pass into coma and death (Loomis).

Treatment.—For the vaso-motor disturbance and spinal congestion, counter-irritation to the spine, or ice-bags and the bromides and nitrite of amyl have proved the most useful. The ice-bag controls the spinal congestion. The bromides must be begun some time before the voyage and continued in large doses until the patient is accustomed to the motion. *Amyl nitrite* seems to be the most efficacious remedy yet proposed. It should be given in full doses upon the first appearance of epigastric distress and repeated as necessary. Dr. Clapham reports 121 successful cases out of a total of 124 in which amyl nitrite was used. Sometimes stimulants are effective but often fail (Loomis). According to Bartholow sea sickness is relieved sometimes by the subcutaneous injection of atropine in small quantity. A little chloroform (Mii-Mv.) dropped on sugar and swallowed is sometimes effective in sea-sickness. *Chloral* in fifteen to thirty grain doses every four hours, is probably the most effective remedy, but it must be given before decided nausea sets in. The bromide of sodium in half to one drachm doses before embarking is one of the first remedies in sea sickness. Nitro-glycerine by the stomach may afford relief (Bartholow).

SEPTICÆMIA.

Is a constitutional disease due to the absorption into the blood of a septic material which is developed in decomposing animal matter by the action of putrefactive bacteria. The disease is closely allied to *surgical* or *traumatic fever* (Loomis).

Causes.—The nature of the septic poison is still a matter of dispute. Some claim that it is a chemical substance formed in a wounded part, while others regard the bacteria the sole cause of the septic infection. Decomposing tissues which cause septicæmia may be *in* the body, on the *surface* of the body, or *outside* of the body.

I. Thus, a decomposing placenta *in utero*, sloughing ulcers in typhoid, necrotic processes in chronic phthisis, diphtheritic sloughs, ulcerative endocarditis, abscess and gangrene of the lung—these are some of the internal conditions which may induce septicæmia.

II. Wounds, gangrene, decomposing membranes, or supuration and necrosis in small-pox, any ill-conditioned wound, especially if lacerated and contused, may cause septicæmia.

III. Dissecting wounds and *post-mortem* manipulation of those who have died of infection, even without a surface abrasion, may induce septicæmia. The respiratory and the gastrointestinal tracts are sometimes the mode of entrance of the infection (Loomis).

Symptoms.—The symptoms of septicæmia or blood-poisoning will vary with the amount of the septic material introduced into the system and the length of the infection. In a well-marked case, after a rigor, or feeling of chilliness, but rarely a distinct chill, there is a rapid rise in temperature; 105° or 107° F. may be reached within the first twenty-four hours. The pulse is rapid, 120 to 140, feeble and thread-like. The mouth, tongue, and surface of the body become hot and dry. If sweats occur they are very slight. Vomiting is frequent. The countenance is dull, and the patient generally free from pain. There is restlessness and low muttering delirium. The respirations are feeble, labored, and hurried. The skin may be *slightly* jaundiced. Diarrhœa is present in nearly all severe cases. In severe cases

death may occur within twenty-four to seventy-two hours, the patient dying in complete collapse. Typhoid symptoms, a dry tongue, rise in temperature, diarrhoea and muttering delirium, following an abortion or child-birth, should always excite suspicion (Loomis).

Differential Diagnosis. Septicæmia may be mistaken for *pyæmia*. *Pyæmia* is ushered in by a distinct chill; septicæmia by a slight chill. In pyæmia the chills recur; in septicæmia there is but one chill. In pyæmia there are profuse sweats, which recur; in septicæmia there are slight, if any, sweatings, and they are never recurrent. In pyæmia the temperature gradually rises to 102° to 104° F.; in septicæmia it is high at the onset, 105° to 107° F. There is a sweet "sickish" odor to the breath in pyæmia, absent in septicæmia. Pyæmia develops slowly, septicæmia rapidly (Loomis).

Prognosis.—When the symptoms of the disease are well marked the prognosis is bad. Its duration is from two days to two months.

Treatment. Discover and when possible remove the cause. Antiseptics should always be used at the seat of the infection. The bowels must be freely acted upon by salines throughout the whole course of the disease. Quinine, salicylic acid and brandy are the three drugs on which we place our reliance. Tanner recommends quinine and nitric acid. The diet must be as nourishing as possible. Billroth's treatment is cooling drinks, a fever diet, morphine at night to secure sleep, from six to ten grains of quinine during the afternoon and warm baths (Loomis).

SPERMATORRHŒA.

Is an escape of seminal fluid containing spermatozoa, without ejaculation and without pleasurable orgasm, usually at stool, with the urine, or to a slight extent at all times. During prolonged erection under intense sexual excitement, a small amount of true seminal fluid is apt to escape into the prostatic sinus, and to be passed at the next urination. This may happen to any one occasionally, and does not amount to disease (Keyes).

Varieties.—*I. True Spermatorrhœa. II. False Spermatorrhœa.*

True spermatorrhœa may exist, but it is a very rare disease. It falls to the lot even of the specialist to see but very few cases of *true spermatorrhœa*.

False spermatorrhœa, is, however, a more common complaint. It is supposed to be present when nocturnal emissions are frequent, when diurnal emissions take place on any sexual thought, and urethral discharge of a glairy fluid attends defecation, when erections with discharge follow the slightest irritation, such as that produced by riding or walking, from the friction of trousers, etc. Such cases are common and are usually due to masturbation, but are not cases of true spermatorrhœa, although they often precede it. Nocturnal emissions may be too frequent; but if associated with sexual feeling, they are natural. If too frequent, they should be checked as they may lead on to the true disease. The glairy fluid pressed out in defecation is rarely seminal, but is prostatic, of a transparent, tenacious character, and not milky. Most of the symptoms which a patient usually mistakes for spermatorrhœa are a gleety discharge, phosphatic urine, vesical mucus, decomposing urine, etc. The young man into whose hands some pamphlet on "Manhood Restored" has fallen, imagines himself hopelessly doomed to impotence, paralysis, and idiocy, because the pamphlet tells him that he has spermatorrhœa, which spermatorrhœa consists in nocturnal pollution, escape of mucus during prolonged erection, of phosphates in the urine, etc. Sometimes, where the diseased mind of a youth suffering from ungratified sexual desire can find nothing else to confirm its suspicions, the natural healthy flocculent cloud of mucus collecting normally in all urine, after it has stood awhile, is pointed to, in dejected triumph, as a demonstration of the never-ending loss of seminal fluid (Tryant and Keyes).

Causes.—Spermatorrhœa sometimes follows excessive masturbation, general prostration, as after typhoid fever, imperfect digestion and general nervous distress from overwork, or other cause, or follow chronic disease of the prostatic sinus and seminal vesicles. It is sometimes associated with constipation and rectal irritation, spasmodic action of the levator ani acting on the

vesiculæ seminales and prostate gland. The worst cases are associated with wasting of the testicles and varicocele. It is sometimes due to excess of venery. Lallemand holds that spermatorrhœa is nearly always dependent upon irritation of the prostate gland and its ejaculatory ducts. Trousseau believes that spermatorrhœa or incontinence of semen is due to some imperfection in the nervous system of organic life, since it is so commonly found in men who have had incontinence of urine in childhood (Bryant and Keyes).

Symptoms.—In true spermatorrhœa it is usual for spermatic fluid in small quantity to pass from the meatus during defecation and urination; while jolting or riding, etc., cause oozing of a bluish fluid from the meatus, which contain spermatozoa. Patients with *true spermatorrhœa* have little care for their sexual functions and are not disturbed on the subject of impotence and present in this respect, a most strongly marked contrast with the hypochondriacal patients imagining themselves impotent from *false spermatorrhœa*. Patients with true spermatorrhœa are not by any means necessarily impotent, but their sexual appetite is usually morbid, excessive or feeble perhaps unnatural and perverted, while sexual power is generally diminished. According to Bryant, spermatorrhœa commences almost always with nocturnal emissions which gradually become more frequent. These are at first attended with erotic sensation, but finally occur without erection. If copulation be attempted the ejaculation takes place at once, often before the introduction of the organ. In many cases the general symptoms are those of great lack of nervous tone, dyspepsia, headache, melancholy, neuralgia, loss of spirits, pains in the back, groins, testicles and vesical irritability. Such patients tend to grow thin, to lose their ambition and to fret. At last the penis shrivels, the testicles become small, flabby and very sensitive and the patient becomes truly impotent, incapable of erection. This malady does not kill. Dr. Keyes knows an old gentleman who enjoys excellent health and who has had true spermatorrhœa more than fifty years (Bryant and Keyes).

Treatment. Many cases are positively incurable, some get well—medicine is of little or no value. It is unfortunate that so many text-books ascribe value to the use of drugs in this malady.

All the hygienic, general and local measures advised for cases of *pollution* may be tried. The use of the steel sound helps to give tone to the parts. Rouband thinks well of ergot—two to eight grains daily—in atonic cases. The use of a local astringent to the prostatic sinus is often of marked advantage. The best agent for effecting this is nitrate of silver in solution (gr. x. to ʒj to the ounce), three to five drops of this thrown into the deep urethra. Bryant thinks half-grain doses of the extract of belladonna twice a day, with some tonic such as iron, zinc, strychnine, or quinine, are valuable. The rectum should be kept empty by a nightly injection of cold water. If a positive local treatment, with perhaps some tonics when required, fails to cure, the patient will be wise to accept his malady as he would some deformity which others cannot see, and think as little of it as possible, keeping his mind pure and his thoughts away from the subject (Bryant and Keyes).

STRANGURY.

Is the painful passing of urine in drops. It is not a disease but a symptom. The following prescriptions have been tried and recommended:

℞ Tincturæ cannabis indicæ.....ʒij.

Sig.: A half-teaspoonful every few hours. (When strangury is due to spinal disease with bloody urine.) —Ringer.

℞ Pulv. opii.....gr. ii.-iv.

Olei theobromæ.....ʒj.—M.

Ft. suppositoria no. ii.

Sig.: Introduce one into the bowel, and repeat if necessary in four hours. —Hartshorne.

STYE.

Called also *hordeolum*, is a small red and painful swelling situated on the outer surface of the lid or near its margin, and consists in a circumscribed phlegmonous inflammation of the lid dependent on morbid change in the Meibonian glands (Bryant and Noyes).

Causes.—Styes generally occur in weakly, delicate persons, and are apt to be associated with chronic blepharitis or conjunc-

tivitis, and often depend on general debility. Another frequent concomitant and favoring condition is nasal catarrh, which will also need attention. Several styes may appear simultaneously, or there may be a succession of them. They give rise to considerable irritation and are often extremely painful. The inflammation usually goes on to suppuration (Bryant and Noyes).

Treatment.—In its inception it may sometimes be checked by applying a bit of ice wrapped in muslin for a few minutes repeatedly, or by pulling the cilium which passes through it. When suppuration is unavoidable, a poultice of ground slippery elm bark is most comforting, and a puncture should be made at an early period. Good living, general tonics, and mild astringents are the proper remedies to prevent their recurrence; but it is important also to investigate the state of refraction, because what causes eye strain will provoke styes (Noyes). The following lotion may be of service:

R Acidi boracici ʒiiss.
Aque destillata..... ʒv —M.
Sig.: Apply to the eyelids several times daily. —Abadie.

SPINA BIFIDA.

Called also *hydrorachitis*, is a congenital defect of the vertebral column, accompanied by a protrusion of the surrounding membranes of the cord, due to an arrest of ossification of the vertebrae of the fetus at this point. It is essentially a congenital *hernia* of the membranes of the cord through an opening in the spine. It is analogous to the meningoceles of the cranium, and is similar in nature to hare-lip and cleft palate. The liquid in hydrorachitis is simply a portion of the cerebro-spinal fluid which normally exists in the subarachnoid space in the brain and spinal cord. It often contains the spinal cord itself or large nerve trunks (Bryant and Sayre).

Characters of the Tumors. The *spinal hernia* is sometimes covered by the whole thickness of integument; at others the integument, though present, is very thin; while occasionally the walls are represented only by a transparent membrane. The tumor may have a broad base and free communication with the

central canal of the cord, or a narrow and more or less pedunculated one. The cord is more likely to be involved in the greater than in the less base. The tumor is always more or less globular, tense and elastic. When the child is asleep or quiet the swelling may be soft; but when the child cries the tumor will rapidly fill out. The skin of the tumor may be ulcerated at birth or have a small opening (Bryant).

Associated with Hydrocephalus.—The tumor is often associated with hydrocephalus and in exceptional instances is double. A *nævus* is not seldom found situated over the tumor. *Club-foot* or *paralysis* of the lower limbs frequently co-exist with it, and in these cases it is tolerably certain that the cord is included in the hernia. Paralytic symptoms are more common in the broad-based hernia than in the narrow. Incontinence of urine or of feces may co-exist with the paralysis (Bryant).

Situation of Tumor.—The lumbo-sacral portion of the column is more frequently affected than any other, but the cervical and dorsal portions are also liable to the defect. Of twenty-seven cases of Bryant's, thirteen occurred in the lumbar region, four in the lumbo-sacral, and nine in the sacral, and one was double, a small tumor being in the lumbar and a large one in the sacral region. Twelve of these cases were uncomplicated with any paralysis or deformity. In eleven there was incontinence of urine and feces, associated in four with paralysis of the lower extremities. Four were complicated with hydrocephalus, two with *nævus*, and one with talipes. Bryant has seen but two cases in which the tumor was in the cervical region. In exceptional cases the spinal hernia may protrude on the anterior part of the spine. When the tumor is complicated with hydrocephalus fluctuation may often be felt between the two parts, pressure on the head causing a fullness of the spinal hernia, and *vice versa* (Bryant).

Diagnosis.—In general, there is no difficulty in diagnosing a *spina bifida*. In any infant a congenital tumor over the spine is probably a *spina bifida*; if globular and tense or capable of becoming tense when the child cries, the probabilities are almost converted into a certainty. The only cases for which *spina bifida* is liable to be mistaken are congenital tumors, unconnected with the spine, such as cystic, fibrous, fatty or *fœtal* tumors. These

may be hard and tense, but they are rarely, if ever, made so much more tense from the child crying, as is the spinal hernia (Bryant).

Prognosis.—The majority of these cases prove fatal. Many of the subjects are ill-developed and die within a few days of birth; death from convulsions is very usual when the sac bursts and its fluid contents escape, more particularly when the escape is rapid. The rupture of the sac is not necessarily followed by a fatal result. Bryant had a case in which at birth the tumor was transparent and soon burst, and subsequently discharged at intervals for three years, and finally contracted up into a solid mass. This case is an example of a natural cure by gradual closure of the bony orifice. The more pedunculated the tumor the better the prognosis (Bryant).

Treatment. The treatment of these cases is very unsatisfactory. In the majority of cases, palliative treatment is all that can be adopted; although in exceptional instances operative interference promises to be of service. The tumor must always be guarded from injury by some soft protective material. Slight pressure to prevent rapid increase of the tumor is always beneficial. The application of collodion is sometimes useful. Aspiration, subcutaneous puncture with a trocar, and injection of the iodo-glycerine solution have been practiced with more or less success. Successful cases are recorded in which tapping of the hernia has been performed. The practice is dangerous, as the drawing off of the fluid has been followed by convulsions and even death; yet it is the least dangerous form of practice, and may be undertaken. The puncture should always be made at the side of the tumor, and the whole of the fluid should never be drawn off at once.

Mr. W. E. Image, of Bury St. Edmund's, cured a case by puncture with a darning-needle at intervals of two or three days, four or six times, and applied a compress. In this case convulsions were produced whenever any pressure was applied to the tumor, but ceased after tapping. Dr. Morton, of Glasgow, has advocated the injection at intervals of seven or ten days of half a drachm of a solution made by dissolving ten grains of iodine and thirty grains of iodide of potassium in an ounce of

glycerine. The injection should be thrown into the sac after the withdrawal of a small portion of the spinal fluid. Dr. Morton reports, in 1881, that out of twenty-nine cases operated upon, there were but six failures. This success is encouraging. In a case of Bryant's, after the second tapping, there was so much draining of the fluid from the cord that the child died from exhaustion.

In no case where the base or neck of the tumor is large or the cord involved should this or any other operation be performed. In pedunculated tumors an operation may be attempted. In the case of a tumor with a small pedicle Dr. Sayre ligated the base of the sac with success. He passed a needle armed with a double ligature through the centre of the pedicle and after tying one ligature on each side, passed two circles entirely around the pedicle, drawing them so tight as to strangulate the mass and then excised it with one stroke of the knife. On the twenty-third day the ligatures came away leaving the wound entirely healed. Dr. Wilson, of Clay Cross, reports a successful case in which he removed the tumor five days after the closure of its neck by means of a clamp. In some cases of spina bifida nature effects a more or less perfect cure by closing in the defective portion of the spinal canal. The child should be fed upon the most nutritious diet with the administration of the phosphates, lime, etc. (Bryant and Sayre).

SPRAINS.

May be very slight or very serious indirect injuries. They include more or less severe overstretchings, if not lacerations of the muscles or ligaments that bind the bones of an articulation together, some fracture or tearing away of the bone at the attachment of the ligaments—"sprain fractures." In children under ten, sprains of joints are liable to be complicated with some epiphysial separation. In the more severe instances are included lacerations of the muscles, tendons, and soft parts that surround the joint. All such accidents require rest and time in their treatment in order that repair may be complete, since neglected sprains are often the cause of joint or bone disease (Bryant).

Contusions of joints as direct injuries always ought to be regarded in a serious aspect, for a large amount of internal mischief may often be sustained with very slight external evidence of injury. Under certain conditions of health a slight blow upon a bone is often enough to set up severe local action or to excite chronic changes which may involve the integrity of the joint (Bryant).

Sprain of the back is an accident of common occurrence. Any twist of the spine or forcible flexion may injure some of the joints. *Hemorrhage* may take place into the spinal canal as a result of the sprain or laceration of the ligaments.

Prognosis.—Sprains may be followed by acute or chronic joint disease of a serious and insidious nature; and this truth should ever be before the surgeon to influence his practice. In every case of wounded joint, however trivial, and in all doubtful cases of wounded joint, the prognosis must be very guarded and the treatment cautious (Bryant).

Treatment.—About one hundred years ago John Hunter said: "*In sprains of joints rest is the first principle.*" At the present day the same words are as pregnant with truth as when then spoken. In simple cases of sprain rest is all that is needed. When swelling and effusion into the joint ensue in the course of the second or third day after the accident, the evidence of internal injury is more marked, for such effusion means inflammation or synovitis, which is to be treated by absolute rest, ensured by the application of a splint, and the local use of cold or warmth. If swelling of the articulation follows immediately upon the injury, effusion of blood into the joint is indicated with or without fracture, but always with severe local mischief. Such cases should be treated by the employment of a splint, to ensure immobility of the joint, elevation of the injured part, and local application of a bag of pounded ice until hemorrhage has ceased, and all risks of inflammation of the joint are gone. As soon as the primary effects of the sprain and all signs of inflammation have passed, the application of pressure to the joint by means of a bandage with passive movement is very striking. When the joint is rendered very tense from effused blood, it may be aspirated. In children all falls upon the hip followed by pain should

be treated by rest and extreme care, as hip disease may originate from such cause (Bryant).

After Treatment.—When the immediate effects of the sprain have passed away the local use of a stimulating liniment and moderate friction of the part expedites the cure. A local warm bath at intervals likewise relieves the stiffness of the joint. Whenever movement excites more than a momentary pain, rest should be observed. When weakness of the joint alone remains, a good bandage or strapping around the part to give support is of great benefit. Where much laceration of ligament has taken place it is necessary for the joint to have some artificial support in the form of either a splint, felt, leather casing or bandage; for no parts are repaired with less permanent power than ligaments. *In the wrist* when much swelling exists, a sprain may be mistaken for a fracture or a fracture for a sprain. Much care is necessary in the diagnosis of such cases. Many sprains of the ankle are also really cases of fracture of the fibula above the malleolus. The popular notion that a severe sprain is worse than a fracture is in the main true; and when the sprain is neglected the case is always more tedious than that of a broken bone (Bryant).

STRICTURE OF THE URETHRA.

An unnatural narrowness of any portion of the canal of the urethra constitutes stricture. This contraction of the canal to constitute stricture must be unnatural, for the urethra has certain points of normal contraction—namely, the meatus, the middle of the pendulous, and the beginning of the membranous urethra, *and these are not strictures*. They become so, if they are unduly small. Thus, an individual may have a *congenital stricture* of the meatus. Any inflammatory condition of the walls of the canal, or spasmodic contraction of the same, constitutes stricture, as does also any growth upon or beneath the mucous membrane, as cancerous, tubercular, syphilitic and membranous (Keyes).

Varieties of Stricture.—Stricture is of two kinds: 1. *Muscular, or spasmodic*. 2. *Permanent, or organic*—the latter may be congenital, or acquired. Inflammatory stricture does not

exist as a disease of the urethra. No amount of simple inflammation of the urethra would occasion serious inconvenience (retention), unless occurring in connection with organic stricture, assisted by muscular spasm or complicated by prostatic congestion.

I. Muscular or Spasmodic Stricture. —Is of the commonest occurrence; an active predisposing cause is a sensitive, high-strung nervous organization. The exciting causes are any local irritation, inflammation, foreign body, irritation of the rectum, (reflex action), ingestion of certain substances, as cantharides, turpentine, quinine, opium, etc., mental emotions, and malaria. Take a nervous, excitable young man with a healthy urethra, or better still with an irritable bladder or inflamed urethra, and attempt to pass a bougie for the first time, and the chances are that it will be arrested. It may be grasped and firmly held at any part of the canal, but this is more liable to occur just as the instrument is entering the membranous urethra, where its point may be detained for many minutes by an involuntary contraction of the cut-off muscles. If the end of the sound is held quietly for a few moments against the contracting muscle, the spasm will yield, and the instrument pass on into the bladder.

What surgeon has not witnessed spasmodic stricture, caused by modesty, shame, anxiety, fear, and irritated mind, as shown by the total inability of some patients to pass water before a class of students or even in the presence of a physician alone in his office? In such cases there is a failure of the compressor urethræ to relax. The patient contracts his abdominal muscles and his diaphragm, and uses all his will, but to no purpose. There are two cases on record of malarial spasm where spasmodic stricture occurred paroxysmally every twenty-four or forty-eight hours, and was cured by quinine after other means had failed.

Irritation and reflex action of neighboring parts, as inflamed hemorrhoids, ulcer or worms may cause spasmodic stricture and retention. Thompson gives a case where all the symptoms of stricture existed, and where a diagnosis of stricture of the membranous urethra was made, when it was discovered that the patient had tapeworm. After the worm had been discharged,

the stricture disappeared. Necrosed coccyx and abscess of the right seminal vesicle have caused spasmodic stricture. Keyes saw complete retention from one application of the tincture of delphinium to the scrotum to destroy pediculi. Remote surgical lesions may occasion retention by reflex spasmodic stricture. Dr. Davenport records the case of an old man who had all the evidences of permanent deep urethral obstruction for ten years, and who was relieved at once and permanently by a single passage of a silver catheter. Keyes has met a large number of cases in which reflex spasmodic stricture was caused by a decidedly narrow meatus, by a very moderate organic stricture, by changes in the seminal vesicles, prostate, bladder, kidney, and strongly concentrated acid urine (Keyes).

Diagnosis.—Spasmodic stricture always occurs suddenly, the stream of urine between the paroxysms being of normal size. It is occasionally continuous, and acts exactly like organic stricture (Keyes).

Treatment.—Discover and remove the cause. Retention produced by simple spasm can often be relieved by the hot bath, rest, an opiate, and ice in the rectum, or at once by an anæsthetic and the catheter (Keyes).

II. Permanent or Organic Stricture.—If not congenital, is the result of a previous pathological process.

Form of Stricture.—1. Linear. 2. Annular. 3. Tortuous. A *linear stricture* is like what would be caused if a thread were tied around the canal; or it may consist of a thin membranous diaphragm, with its orifice at the centre or on one side; or be a crescentic fold or free band. An *annular stricture* is broader, as if a flat tape had been tied around the canal. *Tortuous strictures* include all other varieties. They may be an inch or more long. The amount of contraction in stricture varies from a slight narrowing to nearly absolute occlusion (Keyes).

Number of Strictures.—Stricture is usually single; but Thompson found in a single urethra, four; Hunter, six; Lallemand, seven; Colot, eight; and Otis fourteen (Keyes).

Seat of Stricture.—The urethra is divided into three regions: *Region one*, the bulbo-membranous, contained 215 strictures out of a total of 320, or 67 per cent.; *region two*, the middle portion,

contained 51 strictures, or 16 per cent.; *region three*, the first two and one-half inches of the canal from the meatus, contained 54, or 17 per cent. (Thompson). Otis places a majority of all strictures within the first one and one-quarter inch from the meatus; next the middle portion, and the least number in the deep urethra (Keyes).

The Lesion in Stricture. May be a mere thickening of the mucous membrane, the surface having lost its polish, being congested and perhaps covered with granulations. These changes are the result of chronic inflammation. This process takes place just within and beneath the mucous membrane. If the stricture is extensive and far advanced there will be a mass of dense, fibrous callous material encircling the canal and holding it permanently contracted. This tissue may be slight in extent, cicatricial in character and tightly contracted, or it may be exuberant, knobbed and excessive in amount so that it may be readily felt from the outside of the canal, having a cartilaginous or even woody hardness (Keyes).

Causes of Stricture. Omitting congenital and other varieties of stricture already alluded to (cancerous, etc.) *organic stricture* is always caused by inflammation or a traumatism. Inflammation of the urethra is the most common cause, whether this be simple urethritis or gonorrhœa. Of 220 cases of stricture studied critically by Thompson 164 (seventy-five per cent.) owed their origin to gonorrhœa. The longer the duration of a given gonorrhœa the more certain it is to be followed by stricture. This is almost surely the case where gonorrhœa prolongs itself indefinitely in the gleet stage, the latter condition being nearly conclusive proof of forming stricture. Gonorrhœa attended by chordee is more apt to be followed by stricture than otherwise. Should the chordee be "broken," stricture becomes inevitable and that too of the traumatic sort. The new fibroid and cicatricial tissue has a tendency to contract more and more. *Traumatic stricture* may be produced by falling astraddle a beam, chair, stump, fence or wheel, or a kick in the perineum from man or beast.

The only treatment of gonorrhœa which may cause stricture is the use of injections. The nozzle of a syringe, if long or

roughly used against an inflamed mucous membrane, may irritate it sufficiently to keep up local inflammation, until it becomes chronic, and passes on to that cell-proliferation and thickening which constitute stricture. *Too strong injections* may cause stricture, usually situated from two to four inches down the canal, rarely lower. As a general rule, it may be stated that any injection strong enough to produce either blood or subsequent prolonged pain, is capable also of originating organic stricture (Keyes).

Time of Occurrence of Stricture after Gonorrhœa and Injury.—Of the one hundred and sixty-four cases of stricture following gonorrhœa, tabulated by Thompson, in ten, symptoms appeared immediately after or during the attack; seventy-one within one year; forty-one, between three and four years; twenty-two, between seven and eight years; twenty, between eight and twenty-five years. J. D. Hill makes the shortest period of stricture after gonorrhœa two years; longest, thirteen years; after injury, shortest period four months, longest, eighteen months. Boys have been kicked at school or have fallen on a fence, and symptoms of stricture did not occur for ten or twelve years after (Keyes).

Irritable and Resilient Strictures.—A stricture is said to be irritable when it is very sensitive. A resilient stricture is one which is elastic, contracting quickly after being dilated (Keyes).

Diagnosis.—Organic stricture of the urethra is easy of diagnosis. In exploring a given urethra for the first time for stricture, Keyes prefers to use a blunt steel sound which will just pass the meatus. The blunt sound causes less pain than either the bulbous bougie or the urethrometer. It should be warmed, lubricated, and introduced with all gentleness. If it is obstructed anywhere, there is stricture, for the meatus is normally the smallest part of the canal. When an obstruction is encountered, a smaller blunt sound is selected, and then another, until some sound will enter the bladder. It is always well in searching for stricture to commence with a large size and work down rather than to begin with a small instrument.

Keyes has had cases referred to him, as cases in which a filiform instrument could not be made to enter the bladder, and

he has at once passed a full-sized blunt steel sound easily into the bladder. The explanation of this is that spasm of the deep urethra frequently fails to allow a fine instrument to pass, while spasm in that region always yields to gentle pressure slowly and accurately applied with a blunt steel sound. Moreover, a false passage, or a pouched sinus, or a dilated follicle, will frequently catch the point of a fine instrument, while a blunt sound will escape the obstacle. Having detected stricture, it may be located, calibrated and measured either with a metallic bulbous bougie or the urethrometer in the anterior urethra, or with a flexible bulbous bougie in the deep urethra. Obstructions beyond six and a half inches may generally be set down as due to prostatic enlargement, particularly in patients older than fifty years.

There is a point of physiological narrowing at about the middle of the pendulous urethra, which is by some regarded as a stricture requiring treatment by cutting, when there is no real occasion for the operation. If this point be covered by granulations, and bleeds as the bulb passes it, it is in a morbid condition, and may require cutting, although no true stricture exists at the point. These are the so-called strictures of large caliber so popular at the present day, so common in occurrence, *a rich field for the young surgeon*, and sometimes the occasion of unnecessary cutting, for the gleet they occasion may often be removed permanently by a few passages of a large sound. Just within the meatus—at an eighth to a quarter of an inch there is very often a point of congenital narrowing which may be assumed to be a stricture, and cut if there is any occasion for using an instrument larger than this point of narrowing will admit. It is always wise to divide it if stricture exists beyond. Always when there is a pouched condition of the meatus at the lower commissure, it should be cleanly and freely cut down upon the floor of the urethra (Keyes).

Symptoms and Results of Stricture.—Stricture may exist for years without giving rise to a single symptom of sufficient importance to attract the patient's attention. In fact, it may be said that stricture has no symptoms until it has become so tight as to sensibly obstruct the outflow of urine and semen.

The symptoms usually described as those of stricture are mainly the *symptoms of the results of stricture*. A certain small amount of gleet discharge from the congested, or it may be granular surface usually accompanies the forming stage of stricture but this may be so slight as not to attract attention or may be entirely absent. Exceptionally urethral or other neuralgia depends upon stricture in the forming stage.

The results of stricture are mainly mechanical. The strictured portion acts like a dam, and the urine coming down with great force tends to dilate the urethra behind it. If more than one stricture exists the urethra may be dilated between them. This forcible stretching of the mucous membrane behind the stricture at every act of micturition weakens the tone of the stretched portion of the canal, congests it, and leads to the formation locally of an excess of mucus. Soon a drop of urine is retained behind the stricture in the dilated portion of the canal, the mucus acting upon it as a ferment alkalizes and decomposes it, liberating carbonate of ammonia. This acts upon the stretched urethra, and produces inflammation. This mild inflammation behind stricture is very constant. It furnishes the gleet discharge or the morning drop of muco-pus, which glues the lips of the meatus together.

The gleet of stricture gets better or worse according to the general condition of the patient, the degree of acidity of the urine, and the amount of sexual indulgence or venereal excitement. Exacerbations of gleet from slight causes often constitute the most marked feature of the case in a patient with stricture. In fact, it is the rule in mild cases that the patient is wholly unconscious that his urethra is at all narrowed. He applies for treatment, on account of his gleet, and often refuses to believe that he has stricture, and he repeatedly asserts that he makes as large a stream of urine as ever. Nothing so well as the bulbous bougie will convince such a patient of his condition. The gleet discharge, once commenced behind the stricture, rarely ceases entirely until the constriction has been relieved. The same discharge will be seen in the urine in the shape of small stringy shreds, formed of pus-corpuscles, and appear as small white threads in the voided urine. These shreds may be all caught in

the first gush of urine, what follows being perfectly free from them. When these white filaments are seen settling down in a glass of urine freshly passed, they constitute strong presumptive evidence of the existence of stricture; they may be due to other lesions. As the stricture tightens, a cartilaginous hardness may often be felt from the outside of the urethra at the constricted point. The meatus urinarius looks blue and congested, as does sometimes the whole glans penis, from obstructed circulation. The gleet continues, the stream of urine is small, often forked. The last few drops of urine are retained in the canal. Erection is sometimes rendered imperfect and painful.

The surface congestion of the stretched urethra behind the stricture in time extends backward to the bladder, and brings on irritability of that organ. The intervals between the acts of micturition grow shorter and shorter, and symptoms of mild cystitis appear. This *frequency of micturition* is the symptom of stricture, *next to gleet discharge*, which is least often absent. A slight narrowing of the canal may occasion it. The congestion of the urethra behind a stricture easily becomes greater, is kindled into positive inflammation by dining out, a little excess in drink, or a chilling of the legs; the mucous membrane swells up, the stricture closes, and the patient has retention of urine. If this retention is unrelieved, the bladder becomes over-distended and the contractile power of the bladder may be permanently injured. *Retention may be the only disagreeably prominent symptom* connected with a case of stricture. The spasm and inflammation which caused the narrow canal to become obliterated in these cases, cease after a few hours, and then the patient goes on perhaps for a year or more, without having another retention, not suffering noticeably in the meantime.

If retention does not come on, the inflammation, once aroused behind the stricture, travels back through the prostatic urethra into the bladder, and we have cystitis of the neck. Now commences a frequent desire to pass water, and when the patient seeks relief, he may be passing water in a fine stream every half-hour with great pain and straining. *Hæmaturia* may be, exceptionally, the most prominent symptom of stricture. Keyes has

had several such cases, and has seen the hæmaturia cease upon relieving the stricture.

Along with symptoms of vesical irritation, are found pains in the urethra, aching of the glans penis, or in the testicle, along the cord running up into the back, pains across the lumbar region, in the perinæum, around the anus, over the pubis, in the thighs, legs, sole of the foot, or in the great toe, all of which pains are cured by the dilatation of the stricture. The sexual appetite is often impaired, sometimes nearly obliterated, in old severe cases. But in mild cases, the congestion kept up behind the stricture may be just enough to excite and irritate the patient, causing frequent erections, erotic fancies, and nocturnal emissions. The constant straining in urination may cause piles. The inflammation of the bladder caused by stricture is usually superficial, and the bladder walls, as a rule, thicken and contract, but rarely dilate. The ureters enlarge in connection with old stricture, also the pelvis of the kidney. It may bring on abscess of the kidney (Keyes).

Extravasation.—The thinned and inflamed urethra behind the stricture may ulcerate and during one of the violent paroxysms of straining give way and allow a little urine to escape into the cellular tissue around the canal. If the amount of urine extravasated is small we have abscess or perhaps *blind internal fistula*. Its presence is indicated by a hard lump around the urethra from the size of a pea to that of a walnut. Urethral fever comes on, generally described by the patient as “dumb ague;” the appetite fails and the general health runs down, finally pus forms and finds its way out through the perinæum, leaving a fistula behind. If the quantity of urine which escapes is a little larger acute perineal abscess forms. The pus may burrow in all directions and find an exit through the scrotum along the body of the penis, upon the thighs, nates or groins, or even upon the lower part of the abdomen. Sometimes the whole perinæum is riddled with holes through which the urine escapes. Civiale reports a case of urinary fistula with fifty-two external openings. Fistula will not close until after the stricture has been relieved. Extravasated urine should be let out as soon as possible. Normal urine does not possess septic qualities but

ammoniacal and putrid decomposing urine is deadly in its effect (Keyes).

Complications of Stricture.—Infiltration of urine is a serious complication. Rupture of the bladder is a rare complication of stricture. A comparatively healthy bladder will not rupture from retention. It will become immensely distended and then be relieved by drops (overflow) through the urethra.

Epididymitis is a very common complication of stricture. It may affect one or both sides, and leaves behind a good deal of knotty induration, which is slow in disappearing, and may block up the canal and entail subsequent sterility (Keyes).

Constitutional Disturbance.—A patient with very tight stricture may enjoy robust health. But when the urethra behind a stricture begins to inflame, and the bladder to show symptoms of congestion of the neck, and cystitis; when paroxysms of urethral fever become frequent; when epididymitis and abscess come on, then the whole organism shows signs of distress. The appetite and strength fail, the skin becomes dry, pale and harsh, the mouth coated and shiny, and the patient runs down to a shadow, a living picture of misery, while his main business in life is to pass water (Keyes).

Causes of Death in Stricture Cases.—Are three:

1. *Extravasation of urine*, which, if extensive kills at once by shock, or later by exhaustion and blood-poisoning with supuration, abscess, gangrene and pyæmia.
2. *Uræmia*, from implication of the kidneys, by the extension of inflammation up the ureters.
3. Cachexia and exhaustion (Keyes).

Recapitulation of Symptoms of Stricture.—Briefly the *symptoms of stricture* are narrowing of the canal, with dilatation of the urethra behind, blueness of the meatus, irregularities in the stream of urine, shreds of pus-corpuscles in the urine, pain, neuralgia of the urethra, retention of urine, overflow, dribbling, imperfect erection, irritability of the bladder, hæmaturia, and impotence. The *remoter results of stricture* are cystitis with changes in the bladder, ureters, kidneys and rectum often terminating fatally, and stone in the bladder, infiltration,

perineal abscess, fistula, rupture of the bladder, epididymitis, and sterility (Keyes).

Sexual Hygiene.—An unmarried man frequently tortures himself with fancied ailments, which he ascribes to stricture. He declares himself strictured when the canal is sound. Fancied stricture, next to fancied spermatorrhœa, is a very common hypochondriacal expression of perverted sexuality. The trouble is in the mind. These patients must be put right about the cause of their troubles, and their sexual hygiene must be regulated. This can be accomplished only by marriage or by purity of thought and absolute continence (Keyes).

Treatment.—May be considered under three heads:

1. *Treatment of Uncomplicated Stricture.*—(a) Of large caliber; (b) of small caliber; (c) of the meatus; (d) traumatic; (e) resilient—often irritable.

2. *Treatment of Stricture complicated by*—(a) False passage; (b) retention; (c) retention—the stricture being impassable; (d) infiltration; (e) abscess; (f) fistula; (g) pericystitis; (h) enlarged prostate.

3. *Treatment of Fistula with Loss of Substance.*—(a) *Of large caliber.*—The majority of strictures which the surgeon is called upon to treat are of large caliber. The symptom of which the patient complains is persistent gleet following gonorrhœa, or bastard gonorrhœa, with, possibly, some frequency in urination. In these cases the gleet is treated, and the stricture overlooked. The urethra should be explored, in such cases of gleet, with the bulbous bougie. One, two or more strictures are found. The chances of urethral chill, after first examinations, must be remembered. Being instructed not to mind the smarting at his next urination, and given an alkali, the patient is dismissed to return in two days, to have his treatment commenced. The treatment which generally gives satisfaction in a majority of these cases is dilatation with the conical steel sound. One of these sounds warmed, and of a size corresponding to the bulbous bougie, should be passed with the utmost delicacy and gentleness. At the strictured and tender points a spasmodic contraction may occur, arresting the instrument.

To overcome this patience is better than force. After one has been withdrawn a second and even a third may be introduced, if it is considered safe. The tendency is always to err and use force which is detrimental. It may be stated as a rule that *if a conical steel instrument of any size larger than No. 15 will not enter a stricture by its own weight after a little delay when held in proper position, it should not be used.* If force be used in passing sounds the injury will be threefold: 1. The production of epididymitis. 2. The excitement of inflammation in the stricture. 3. The production of chill and urethral fever. The patient should wear a suspensory bandage while taking this treatment. At each subsequent visit of the patient the surgeon commences with a sound from one to two sizes smaller than the last instrument introduced at the previous visit and carries the dilatation as far as possible without the employment of force—this till the full size is reached.

Intervals between the Sitzings.—These vary in different cases; but it may be stated, as a rule, *that it is bad surgery in treating stricture by dilatation to re-introduce an instrument—unless it be filiform—before the lapse of at least seventy-two hours, and that more rapid progress will be made with the case by waiting till after ninety-six hours—often even until the sixth, seventh or eighth day.* The reason for this rule becomes clear upon studying the therapeutic effect of pressure upon stricture-tissue. The first effect is mechanical (stretching) and sedative (quieting muscular spasm at the strictured point); this lasts twenty-four hours. The next effect is reactionary (congestive and spasmodic), resulting in extra tightness of the stricture and increase of discharge; this lasts from 24 to 48 hours. The final curative effect is absorptive. Absorption is excited by the increased activity of the circulation about the stricture, and continues for two or three days or longer; after which, contraction and growth of stricture-tissue recommences. It is just at the period where absorption ceases and recontraction commences that a dilating instrument can be reapplied most effectively, and this period is, in the majority of cases, on the fifth to the eighth day. That absorption takes place during the cure of stricture by dilatation may be proved during life by examining the hard car-

tilaginous bands often found surrounding the urethra, and constituting stricture. These bands can be distinctly felt, over an instrument introduced through the stricture, and, during the treatment, observed to become smaller.

As to the degree of dilatation which is to be aimed at, every urethra has its own gauge in the size of its meatus—provided that meatus be not congenitally small, or contracted by disease. If there is any cicatricial tissue in the circle of the meatus, or if a probe can make out any pouching below the lower commissure, the meatus is strictured, and requires treatment. The *normal meatus* is the smallest part of the healthy canal, and the object in view is to bring all available pressure to bear upon a morbid narrowing of some other portion of the tube. To do this the meatus must be put lightly upon the stretch. The meatus may often be cut, even when not obviously too small, in order to facilitate the use of a sound larger than would otherwise pass. Strictures of the anterior urethra, if very freely cut, may be radically cured; not so strictures of the deep urethra. The latter require the use of dilating instruments.

The size to which a strictured urethra may be dilated, is ascertained by measuring the circumference of the flaccid penis; circumference of penis, 3 inches; the urethra should take size 30. 3¼ inches; size 32. 3½ inches; size 34. 3¾ inches; size 36. 4 inches; size 38. 4¼ to 4½ inches; size 40. (Dr. Otis's Standard).

As soon as a full-sized instrument will slip through a stricture by its own weight, all symptoms will usually have ceased; but recontraction will almost inevitably take place in stricture of the deep urethra, unless the sound be passed weekly or fortnightly for a long time (Keyes).

(b). *Of Small Caliber.*—To this class belong strictures admitting any instrument less than No. 15. This class of strictures requires the same kind of treatment as those of large caliber, but are better treated with soft than with steel instruments. There is danger of making a false passage in an obstructed urethra with a small metallic instrument. Below No. 15, soft instruments only should be employed, unless there be a guide through the stricture. Dilatation is carried on as already direct-

ed, steel instruments being used as soon as the stricture will admit No. 15. Progress is slower with soft than with steel instruments. Cutting (internal urethrotomy) and stretching (divulsion) operations are growing daily in favor in the treatment of strictures of small caliber, yet stricture in the deep urethra is best treated by dilatation, no matter how tight it may be. Cutting and divulsion are only helps. They are attended by danger. The sound must be used after them. The patient need not lose a day from business on account of treatment by dilatation. It is safer, and more tedious.

Divulsion or internal urethrotomy may be better in two classes of cases: 1. If the patient cannot give time enough to carry out dilatation properly. 2. If pretty severe urethral fever follows attempts at dilatation. All true strictures of the pendulous urethra may be radically cured by free cutting internally. Otis proved this. Radical cures are accomplished by free cutting anteriorly—not so in the deep urethra. In commencing the treatment of stricture of small caliber, it may be impossible to enter the bladder with any instrument, either on account of the tightness of the stricture, or because the point of the instrument does not engage in the latter. In these cases gentle perseverance and skill will rarely fail of success. Keyes mentions one case of his own in which it required ten sittings, most of them over one hour long, before any instrument could be made to enter the bladder. On the tenth effort, the instrument passed. It entered the bladder, and at once the stricture was divulsed. In two weeks the patient passed his own full-sized instrument. In the so-called impassable stricture, where urine passes out, but no instrument can be made to enter the bladder, a filiform bougie can invariably, with patience, be inserted into the orifice of the stricture (Keyes).

(c) *Stricture of the Meatus*.—Stricture at or near the meatus is usually made worse by attempts at dilatation. It must be cut.

(d) *Traumatic Strictures*.—Are not usually amenable to treatment by dilatation.

(e) *Resilient Strictures*.—Will not dilate, must be cut (Keyes). Treatment of stricture complicated by—

(a) *False Passage*.—Results from rough or unskillful use of small instruments in an obstructed urethra. On the withdrawal of the instrument, blood flows freely from the meatus. The treatment for a fresh false passage of this sort is to let it alone absolutely for two weeks. To avoid a false passage of any kind, when searching for the orifice of a narrow stricture, consists in filling the urethra with whalebone filiform bougies, thus mechanically filling up the false passage, until some instrument will glide by its orifice and enter that of the stricture.

(b) *Retention*.—A patient, with stricture, may be enjoying good health, when suddenly, after exposure to cold, after a dinner or a carouse, he finds that he can not pass water. If no instrument can be passed, the patient should be placed in a hot bath for 15 or 20 minutes, or a sitz-bath. He will often be able to pass water while in the bath. A piece of ice in the rectum may be tried. A grain of opium may be given every hour until four or five doses have been taken.

(d) *Infiltration of Urine*.—The infiltrated urine must be drained off, and the stricture relieved. The operative indications are three: 1. To stop progressive infiltration by extensive dependent incisions. 2. To provide an escape for urine constantly collecting in the bladder, by free central incision of the urethra behind the stricture. 3. To divide the stricture thoroughly.

(e) *Abscess*.—The abscess should be opened.

(f) *Fistula*.—A simple fistula with one or two openings will close of itself, as soon as the stricture has been dilated fully. In all these cases treat the stricture first, and then the fistulæ. If the fistulæ remain after full dilatation of the urethra, the patient must pass no urine except through a catheter for one month. If this fail, the hard edges of the fistulous tract should be incised, or cauterized with the galvano-cautery. A silver probe coated with fused nitrate of silver may be passed into the fistulæ (Keyes).

Instruments.—The instruments necessary to treat all cases of stricture are: different varieties of *bougies*, *sounds* and catheters with a scale; instruments for divulsion, internal and external urethrotomy, and an aspirator.

Bougies. *Filiform bougies* are such as measure one millimetre or less in diameter. There are three varieties: the French, English, and whalebone. The whalebones are olive-tipped. Whalebone filiform bougies have displaced all others at the present date. These bougies may be used as guides for larger instruments, if made about two feet long. In employing a whalebone as a guide it should be first introduced into the bladder then threaded into the instrument to be guided. In introducing a filiform bougie when it catches, partially withdraw and slightly rotate it, pushing it forward while making the rotatory movement. An excellent method of finding the orifice of a stricture, especially where false passage exists, consists in cramming the urethra full of filiform bougies, engaging their points in all the lacunæ and false passages, and then trying them, one after another until one is pushed through the stricture. Injecting the urethra full of warm oil is a great aid. *Of the other bougies* (not filiform) the French and English conical are used. The French conical are necessary in the treatment of stricture up to size 12 or 15. *English yellow bougies* are smoother and stiffer than the preceding. All of the foregoing instruments are introduced without a stylet by simple direct pressure with rotation.

The Bulbous Bougie.—Is an instrument necessary for the accurate diagnosis of stricture. They consist of a flexible, woven shaft, headed by an acorn-shaped extremity. A set of them, running from five to thirty, is required. The urethrometer of Otis was designed to take the place of a whole set of bulbous bougies from size twenty to forty.

Sounds. The steel sound is the most necessary instrument for the treatment of stricture. Steel sounds are conical or blunt. The conical are the better instruments and should run from No. 13 to 35, inclusive. For dilating stricture soft instruments are better in the low sizes—below No. 13, and steel for all sizes above No. 13. Thompson's rapid dilator and Otis' dilating urethrotome are much used in the treatment of stricture (Keyes).

SPINAL IRRITATION.

Is always functional and in most cases is associated with congestion or anæmia (Loomis).

Causes.—It occurs chiefly in women between the ages of fifteen and twenty-five. Spinal shock, or concussion from any cause, and all those practices and habits which cause nervous strain and result in nervous exhaustion, may also produce spinal irritation. Chronic alcoholism and the opium habit may also induce it. All severe diseases may cause it (Loomis). Anæmia of the posterior columns of the cord is a cause (Hammond).

Symptoms.—*The one constant and special symptom of spinal irritation is tenderness* all along the cord or over a single vertebra, which may be excited by pressure, motion, heat, cold, electricity or other irritants. The spinous process is the place where pressure causes greatest pain. Tactile hyperæsthesia is very marked. Motor disturbances are common. Weariness, and heaviness occur in the lower limbs. Contraction, twitchings and spasm may occur in the muscles of the forearm. Cardiac palpitation, nausea and vomiting, nervous cough, embarrassed phonation and breathing, and attacks of fainting are not uncommon. Patients are depressed, melancholy, and irritable, and subject to insomnia, headache, dizziness, etc. Vaso-motor changes are marked; the extremities are cold, sometimes blue, and the face alternately pales and flushes. When the point of tenderness is in the cervical region the pains are referred to the head, pharynx and chest. When it is lower there are respiratory and cardiac symptoms, and if in the dorsal region, there is pain in the stomach with dyspepsia, nausea and vomiting (Loomis).

Differential Diagnosis.—Spinal irritation may be mistaken for *spinal congestion, meningitis, myelitis, tumors and tetany*. In *spinal congestion* there is no tenderness, and the symptoms are aggravated by the supine position; in spinal irritation the reverse is the case.

Spinal meningitis is accompanied by pyrexia, and the pain in the spine is increased by motion, and muscular spasms occur in the back and neck. The iron band sensation about the waist, paralyses, etc., are almost diagnostic of *myelitis*. In *spinal*

tumors the symptoms are localized and permanent. *In tetany* there are muscular contractions (Loomis).

Prognosis.—Is favorable.

Treatment.—Alcoholic stimulants, meat diet and exposure to sunlight and fresh air are of service. Aconite and veratria may be applied locally in the form of an ointment. The galvanic current and the Faradic current in some cases will give immediate relief. The daily application of the ice-poultice is recommended. Absolute rest in the country with a good diet does much for these patients (Loomis).

SNEEZING.

Treatment.—Camphor is an excellent remedy in incessant sneezing with profuse running from the eyes and nose. The powder should be sniffed or the alcoholic solution inhaled from a handkerchief. One, two or three drops of Fowler's solution three times a day are very efficacious in the paroxysmal sneezing allied to asthma. In ten-grain doses several times a day iodide of potassium is said to cure that troublesome and obstinate affection, violent paroxysmal sneezing (Ringer).

SOMNAMBULISM.

Is a condition incident to sleep. It embraces the mental and physical performances, sometimes very extraordinary, which are observed in sleep-walkers. Similar phenomena are observed in the condition known as the *hypnotic* or *mesmeric* or *magnetic sleep* (Flint).

Treatment.—In these cases bromide of potassium is probably the best remedy if given in large doses (Ringer).

SORE FEET.

A tablespoonful of common washing soda, added to half a gallon of warm water, is useful in the treatment of tenderness of the soles. The feet should be immersed for half an hour twice a week or oftener (Ringer).

STINGS.

Insect-stings in the United States are not very severe, and unless inflicted in large numbers are rarely brought under the notice of physician or surgeon. Slight fever and constitutional disturbance may follow them in children who are very susceptible to external influences, whilst local swelling, heat, and redness are very marked in others. Should a wasp or bee accidentally be taken into the mouth with fruit and the base of the tongue, pharynx, or larynx stung, serious symptoms may arise from œdema and swelling of the parts impeding respiration. When this accident happens, scarifications should be employed with fomentations; but if life be threatened, the wind-pipe must be opened.

The *sting* should be removed, if possible, with forceps. A drop of liquor ammonia, or sal volatile, or oil of lavender applied to the part generally gives relief. The parts should be protected from the air by collodion, flour, chalk or strapping.

For mosquito-bites Dr. J. Stevenson advises the use of a moist cake of soap, the thin lather from the cake being allowed to dry upon the bitten part. All pain and itching, he states, disappears within ten minutes of this application. In South America the mosquito-bite is at times attended with severe local inflammation and sometimes with ulceration.

In Africa and Asia the *scorpion*, which is from six to ten inches long, is so venomous as to cause by its bite, at times, loss of life. Olive oil is the usual application for the wound, but liquor ammonia is probably better. Brandy and ammonia should be given internally when great depression exists.

The bite of the *tarantula* is very troublesome and is often followed by nervous depression, vomiting and local pain. The bite of the *spider* is very similar in its effects to that of the scorpion, though the wonderful stories as to its poisonous qualities are now regarded as fabulous.

Serpent-bites are often serious, and at times fatal. Stimulants should be given in large quantities and the part cauterized by nitric acid, carbolic acid, or nitrate of silver (Bryant).

SUDAMINA.

Is an eruption which consists of little elevations of the cuticle, about the size of pinheads, filled with a watery fluid (miliary vesicles), which consists of the secretion from the sudoriparous glands. It is usually clear and transparent. These vesicles never run together, are most abundant on the neck and trunk, and are met with in those who have been perspiring freely as the result generally of some acute affection, such as rheumatic or enteric fever or pneumonia, etc. The vesicles dry up in a day or to. The vesicles are due to the excessive secretion of sweat (Anderson).

Treatment.—If there be much irritation of the skin, a mild astringent lotion may sometimes give relief. We should do our best to keep the patient cool (Anderson).

SHOCK AND COLLAPSE.

Are terms used to signify the loss of power which immediately follows severe injuries, especially those attended with violence. It is due to reflex paralysis of the vaso-motor system of nerves. The gradations of shock and collapse are innumerable, and the symptoms by which they are characterized vary from a passing faintness or disturbance of the heart's action to final syncope. The state of collapse may be regarded as a chronic syncope (Bryant).

Causes.—*Shock* may be caused by any severe injury, especially gunshot wounds, compound fractures, severe burns, protracted surgical operations and all cases in which serious injury is attended with violence, pain and loss of blood. Mental shocks may be as severe and fatal as those of the body, as for instance: A man receiving unexpectedly, some startling news which excites severe emotion and dying suddenly is said to die from shock; a second receives a fatal blow upon the epigastrium; a third is struck dead by lightning; death in each case is said to be due to shock. In all the heart's action is suddenly arrested through the nerve centre—in one case through the mind, and in the others through the body (Bryant).

Symptoms.—A man receives an injury and is not killed, but collapsed. He has sustained a shock more or less intense and as a consequence becomes cold and almost pulseless. His skin appears to be bloodless and covered with a cold clammy sweat. He breathes with sighs and gasps. His nostrils dilate, his eyes are dull and vision is imperfect. Sometimes shock is so severe that the patient sinks from it without reaction. It should be noted that vomiting is often the first indication of reaction in general collapse as it is often in that of head injuries. Patients with bad kidneys are very liable to suffer from shock and to succumb to any operation, however trivial (Bryant).

Treatment.—The patient must be kept in a horizontal position; free access to air provided; and cold water dashed into his face. In severe cases whisky should be injected under the skin. Hot brandy and water, if the patient can swallow it, is probably more efficient than anything else. External warmth should be secured by means of blankets, hot flannels, and hot water bottles. Bleeding, if any exist, must of course be checked (Bryant).

SUPPRESSION OF URINE.

In suppression no fluid comes down the ureters into the bladder.

Causes.—Suppression may be caused by fright or strong mental emotions, injury to the kidneys, or the onset of an inflammatory attack, and by the effect of cold, or if the kidney be the seat of previous chronic disease, by operations on the bladder or urethra, or even by the introduction of a sound or lithotrite, by the passage of kidney-stone, etc. (Keyes).

Symptoms.—Are depression, languor, with apprehension, more or less fever, with hot, dry skin, and hard pulse. There may be chill, vomiting, headache, and pain in the back and loins with constipation. No urine is voided, or only a little high-colored secretion. Suppression may come on gradually from advancing chronic kidney disease. In this case, there is usually anasarca. The urea and other products of waste accumulate in the blood and the patient becomes poisoned by them. Drowsiness and stupidity, perhaps delirium and coma, come on; there

may be convulsions, and the patient dies in from two to five days. On the other hand, cases of suppression after scarlet fever, one of seventeen and another of thirty days, have been reported. Suppression for seventeen months, with recovery has been recorded (Keyes).

Diagnosis.—Is easy. In retention the bladder is full, in suppression empty (Keyes).

Treatment.—Dry cups and hot fomentations over the kidneys, hot-air bath and hydragogue laxatives, the free use of warm drinks, flaxseed-tea, etc.; and if there be no inflammatory condition full doses of acetate of potash and infusion of digitalis may be tried.

SYNOVITIS.

Is an inflammation of the synovial membrane. It may be *acute* or *chronic*.

Causes.—This disease may be caused by wrenches, blows, punctures, strains, exposure to cold, or sudden changes of temperature after violent exercise, or may be dependent upon constitutional affections, such as rheumatism, gout, or syphilitic or gonorrhœal poisons, etc. Scrofula may cause a synovitis (Loomis and Sayre).

Symptoms.—The knee is the joint most frequently affected. There is severe aching pain in the joint, increased by motion, great swelling, redness of the surface, tenderness and fever. As a rule, synovitis does not affect more than one joint; and as there is scarcely any or no effusion into the surrounding tissue, the outline of the joint can be distinctly discerned and fluctuation is readily detected. When the knee is affected the patella is pushed forward and there is great fullness on each side of it and at the lower and front part of the thigh (Sayre and DaCosta).

Treatment.—The limb must be kept absolutely motionless. A splint must be applied so as not to touch the affected part. Leeches to the joint, cups in the neighborhood and evaporating lotions or hot fomentations are useful. Calomel purgatives should be administered and opiates to relieve pain. When there is a tendency of the disease becoming chronic iodide of potassium should be administered. And if the disease be connected with

rheumatism ammonia and potash should be prescribed. Where there is a tendency to gout, colchicum with potash is to be employed. In syphilitic cases, mercury in its different forms is most to be relied upon (Horwitz).

SYPHILIS.

Is a general dyscrasial blood-disease caused by the absorption of a peculiar virus into the circulation, manifesting itself primarily by the appearance of a poisonous sore at the point where the virus entered, and afterwards by a succession of morbid manifestations occurring at longer or shorter intervals, which may affect every organ and tissue of the body. The *virus* is only known by its effects. Exactly what it is has not yet been determined. But it is more than probable that it is a living contagious element.

Diday and Rollet failed to inoculate syphilis upon cancerous patients, and assume an antagonism between the two maladies; but Keyes says, "This surely does not exist, as I have seen many of the varieties of cancer upon syphilitic patients."

Hutchinson has happily compared syphilis to the contagious exanthemata, small-pox, measles, scarlet fever, as possessing all the peculiar characters common to this group of diseases, namely: it is communicated only from one diseased person to another healthy one; it has a stage of incubation before any sign of the disease appears; it has a stage of efflorescence, which indeed in syphilis is prolonged and marked by relapses; it has a period of decline and sequelæ—the later tertiary lesions—which do not always occur, and during which the disease often ceases to be communicable.

Again, most of the varied efflorescences of syphilis, like those of the other exanthemata, tend to pass away spontaneously after a time; thus, as Fournier aptly puts it, affording a triumph to every method of treatment. One attack confers immunity from another often for life, always for a long period. The disease is transmissible by inheritance, as in the case of the other exanthemata when the child is born before the mother recovers from disease. Finally the sequelæ do not constitute transmissi-

ble disease even by inheritance. As in the other zymotic diseases, a portion of the virus, however small, is capable of infecting the whole body as if by fermentation. Thus the analogy of syphilis with the contagious exanthemata is clear, only its febrile symptoms are less marked, its efflorescences more varied, and its course much more protracted—counted by months instead of days—and more subject to variation as well as more amenable to treatment. Syphilis is fortunately only contagious, it is not infectious; its poison is not volatile, is not diffused in the air; direct contact of the virus with a surface capable of absorption is essential to the production of the disease.

A patient may have malignant scarlet fever and die in a day without a sign of eruption, but still he has scarlet fever, as no one denies. Even if one syphilitic chancre out of twenty were not indurated the other nineteen would be amply sufficient to establish a rule. But the proportion is far larger and there is perhaps no symptom of any disease more constant than is the induration of syphilitic chancre, yet the patient does not have syphilis because his chancre indurates, he already has syphilis before his chancre appears. If he did not have it he could have no chancre at all and the induration of that chancre is just as much one of its symptoms as is ulceration of a chaneroid. A patient who has absorbed syphilitic virus has syphilis at once, and because he has syphilis he gets a sore at the point of entrance of the poison after a period of incubation, as the first symptom of the disease. This chancre may be destroyed by caustic, or the knife, but the disease will run its course unaltered (Keyes).

Interval Before Absorption. Clere tells of a medical student who washed himself immediately after sexual intercourse and on careful examination for several days subsequently detected absolutely nothing; twenty-eight days afterward chancre appeared, followed by general syphilis. Hill relates the case of a man who in sexual intercourse tore his frenum which bled freely and fearing infection called upon Hill within twelve hours after the accident to cauterize it with fuming nitric acid. About one month afterward the scar indurated. It never ulcerated again but the

regular manifestations of true syphilis came on at the usual intervals.

Diday cauterized a syphilitic chancre within six hours after its appearance; but although the sore healed promptly, general syphilis followed. The rapidity of absorption of the poison of a snake-bite is well-known, as is also that of rabies and the poison of a dissecting wound, and there is no reason why that of syphilis should be less so (Keyes).

Second Attack of True Syphilis.—Hutchinson saw a well-marked case, in a physician, of two attacks of syphilis, each preceded by its characteristic syphilitic chancre. The same patient had had small-pox twice. He records a case in which a woman with mild inherited syphilis got a new attack in the usual way at the age of twenty. Diday has collected twenty-five cases, of which he personally saw twenty, of reinfection. In all of these cases there was syphilitic chancre with characteristic induration, occurring a second time after a previous syphilis. Diday concludes that the minimum time for the cure of syphilis is twenty-two months, and that, where syphilitic chancre appears twice in the lifetime of an individual, the second attack should not be treated until symptoms of secondary syphilis appear, as these may never come on, the whole attack consisting simply in syphilitic chancre. Keyes says that he can honestly state that he has never seen a case of syphilitic reinfection to recognize it. He also says, "While, then, a second true syphilitic infection is possible even while the subject bears the marks of late tertiary disease, yet such infection is eminently exceptional, and allowance must be made in the reported cases for (1) chancroid accompanied by some eruption, as a coincidence; (2) ecthyma mistaken for syphilis, after which the first true syphilitic infection might pass for a second; (3) false chancre, indurated mucous patch; and (4) cases of tertiary ulcer faultily diagnosticated" (Keyes).

Transmissibility to Animals.—Besides this peculiarity of only appearing once in a given individual, syphilis differs from chancroid in not being transmissible to animals. So far as experimental demonstration yet goes, it must be asserted that the sad privilege of having true syphilis belongs only to man (Keyes).

Incubation of Syphilis.—After the poison of syphilis has been absorbed, the break in the epithelium through which it entered heals, and the virus ferments as it were, in the blood, until it is ready to give itself local expression, first at the point of entrance in the form of syphilitic chancre. This period of incubation or hatching, has been critically studied by many authors, both by inoculation upon healthy subjects and clinically by close observation of patients. The usual period after contact, or inoculation, at which a chancre first appears is about the end of the third week. In exceptional cases it may be ten weeks. The longest period of incubation that Keyes could find among the authentic cases of experimental inoculation is forty-six days. There is no case on record of an incubation less than nine days, except one case reported by Taylor, and one by Hammond. During the period of incubation the patient bears no sign of disease. During the fourth week after exposure a syphilitic chancre appears, and this is, perhaps, the most valuable mark of a syphilitic chancre, and practically all sores appearing later than ten days after suspicious contact must be regarded with distrust, while those coming sooner may be more lightly considered (Keyes).

Multiple Inoculation.—It has been found, that where many points were inoculated at the same time, usually all took and appeared simultaneously as chancres. Inoculations made upon different individuals, with virus derived from the same lesion, have required different periods of incubation for their development. Hunter said, that syphilis was not reinoculable upon an already infected person. Fournier believes that about two per cent. of auto-inoculations of syphilitic chancre take. The rule then is this: Reinoculations of syphilitic virus upon patients already syphilitic produce no results. Auto- or hetero-inoculation upon a patient with very young chancre is occasionally successful. Hetero-inoculation during the late tertiary stage of the disease is more often successful. At both of these periods the patient is not fully protected, the system not being saturated with the syphilitic poison at first, and the virus being at a minimum toward the end (Keyes).

Secretions Capable of Transmitting Syphilis by Inoculation. Inoculations of healthy subjects with the fluid secreted by

syphilitic chancre, mucous patches, any secondary cutaneous or mucous lesion yielding a discharge, and of syphilitic blood drawn from a patient with an eruption, taken either from a papule, or tubercle, or from the healthy skin between the lesions—all such inoculations yield indurated chancre after a period of incubation, which chancre is succeeded by general syphilis. The blood of syphilis is poisonous in the intermediary periods between the eruptions, when the skin and mucous membranes are sound, as vaccinal syphilis proves.

The secretions of other pathological lesions not syphilitic will not produce syphilis unless some of the patient's blood be inoculated at the same time. Gonorrhœa acquired from a syphilitic patient having at the time only gonorrhœa, reproduces itself as gonorrhœa and not as syphilis. The same is true of chancroid. Diday inoculated pus from a pustule of acne produced upon a patient "in full syphilis" by the administration of iodide of potassium. The result was negative. The same is true of the vaccine virus. Pure vaccine virus taken from a syphilitic patient before there is any pus in the vesicle will produce vaccinia only, if no blood be inoculated. Since syphilis can be communicated by vaccination it is wiser always to use lymph from the calf and never humanized virus. Inoculation has failed to produce positive results from ulcers of the late tertiary period of syphilis. Diday inoculated sixteen times with blood from patients suffering from tertiary syphilis (nodes), always with negative results. The fact that patients with tertiary syphilis may occasionally acquire a chancre and the earlier eruptions anew and the other undoubted fact that such patients may procreate healthy offspring, render it still more certain that late tertiary syphilis is no longer either communicable or transmissible. But on the other hand, women who have positive tertiary symptoms undoubtedly procreate diseased children sometimes, just as they as certainly often produce healthy ones. Hence tertiary syphilis may be said to be generally but not always free from the dangers of transmission and communicability. The older the disease the less apt it is to be transmitted. The male loses the power of transmission seemingly long before the female.



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None of the physiological secretions or excretions can produce syphilis by inoculation. Mucus from the mouth of a syphilitic patient having no lesions of the mucous membrane at the time has been tested often. Diday has inoculated saliva without success. If mucous patches exist, then the saliva produces chancre when inoculated, as shown by the interesting cases of tattooing reported by Maury. Vidal has proved the harmlessness of tears, and the sweat and urine have been in a similar way relieved of blame. The semen has been inoculated by Mireur, taken from a man in the full bloom of secondary eruptive disease. Milk from a syphilitic woman is neither inoculable experimentally nor does it give the disease to the child who drinks it. Where the nurse has a syphilitic lesion of the nipple, the child surely becomes poisoned if it have a fissure or other abrasion of the lips through which the poison can be absorbed; but in such case syphilis in the child is always preceded by chancre of the lips or mouth (Keyes).

Methods of Transmission of Syphilis. Syphilis always commences as a chancre, with two exceptions—or rather one alleged exception, the *choc-en-retour*; the other a real exception—that of inherited disease.

Choc-en-retour.—Keyes says, "This is a misty condition, probably only a high-sounding title to conceal ignorance." In it the ovule of a healthy woman is supposed to be infected with syphilis by the semen of the syphilitic father, a semen which the direct test of inoculation proves to be void of any poison. The syphilitic germ grows, and in its turn poisons the mother, who thus becomes diseased without the necessity of having any primary lesion. Because no chancre has been observed in these cases does not prove that she never had it. Many a woman, possibly the greater number having syphilis, gets the disease without any knowledge of the primary lesion.

The *Choc-en-retour* does not appear very reasonable, because it has not been proved absolutely that the syphilitic father, the mother remaining sound, can infect the child through the semen (Keyes).

Inherited Syphilis.—When a child is born with inherited syphilis, it naturally never has had a chancre—a primary lesion. No

one doubts that a mother in active syphilis aborts, miscarries, or produces a diseased child. As to whether the father can produce a diseased child by infecting the ovum through impregnation without infecting the mother (and through her the ovum), is a question not yet settled. That a father may have syphilis and still have a healthy child is proved by Mireur. He leans toward the belief that, if the mother escape, a syphilitic father can not produce a syphilitic child. He also demonstrates that both parents may still suffer from tertiary lesions, and produce seemingly healthy children. When the mother has syphilis, it has been shown that she may have a healthy child while under treatment, and a diseased one if the treatment be left off before she has passed the virulent stage of the disease.

Finally, that a man himself syphilitic, with a syphilitic wife and a non-syphilitic mistress, may have a diseased child by the former and a healthy child by the latter, the two children being born within fifteen days of each other, seems to be fully proved by Charrier's case. Keyes says, "The great stumbling-blocks to me, standing in the way of my seriously accepting the fact that a child may be born syphilitic and still have a healthy mother, are the failure of direct inoculation upon such mothers, and the so-called Colles's law, namely, a child born syphilitic can not poison its own mother, but may poison a healthy wet-nurse" (Keyes).

The Methods of Contagion are Immediate and Mediate.—Syphilis is very often transmitted by means other than sexual contact, more so than chancroid. Surgeons and accoucheurs get chancre of the fingers by inoculating abraded spots in the exercise of their professional duties, and in their turn may spread the disease. A midwife, with a syphilitic lesion upon her finger of which she was aware, communicated the disease directly and indirectly to forty-five persons. She was convicted and sentenced to twelve months' hard labor. Chancre is frequently transmitted in kissing, a little mucous patch in the mouth of one party poisoning any fissure on the lips of the other. Both of these methods are immediate.

Children acquire chancre of the lips from nursing-women with mucous patches of the nipple, and, on the other hand,

healthy nurses get chancre of the nipple by suckling children with inherited syphilis who have mucous patches of the lips. Colles's law that a child with mucous patches of the mouth can not produce ulceration of the nipple if it sucks its mother, depends simply upon the fact that its mother already has syphilis before the child is born, and consequently can not get a new chancre of the nipple. The following are examples of mediate contagion: Puche speaks of a gentleman with a long prepuce, who, after marriage, encountered an old mistress, with whom he had intercourse. Returning home shortly, without having washed, he repeated sexual intercourse with his wife, depositing the virus from his prepuce in her vagina. He escaped, but in due course, she developed chancre and general syphilis. A similar authentic instance is related of a woman who proved unfaithful. Her husband, embracing her shortly afterward, relieved her of the poison left in her vagina by her lover, himself developed chancre, while she escaped.

Smokers of a pipe sometimes get chancre of the lips, the virus being deposited upon the mouth-piece of the pipe by some previous smoker who had mucous patches of the lip. Toys may communicate the disease to a child; tooth-brushes and cigars to an adult. Glass-blowers get syphilis in the same manner, as they work in sets of three at the same tube, passing it from mouth to mouth. Syphilis sometimes runs through a whole family, from the use of the same spoons or cups, passed from one mouth to another. Washerwomen become infected in cracks of the fingers through the virus contained upon soiled clothes. Wet-cups, transplanting teeth and passing the Eustachian catheter have proved sources of mediate contagion. Circumcision and vaccination are familiar instances of mediate contagion. In all such cases chancre precedes the development of general syphilis (Keyes).

For the *Induration, Ulceration and General Characters* of a *Chancre*, see Chancre.

For *Syphilitic Bubo*, see Bubo.

GENERAL SYPHILIS.

Primary syphilis includes the chancre and its accompanying adenitis, and lymphangitis. A chancre never does nor can appear elsewhere than at that point through which the poison first entered the body. Hence, inherited syphilis has no primary stage, but is general from the start.

Primary Syphilis, so far as its manifestations go, is purely local. Not so with general syphilis. There is no organ or tissue of the body through which it may not manifest its presence by symptoms. The lymphatic glands all over the body may suffer. The skin from crown to sole, the nails, the hair, and the mucous membranes have their peculiar affections due to syphilis. The eye and the testicle do not escape, and each and every viscus is liable to be invaded, as are all the tissues, connective fibrous, muscular, cartilage, bone, brain, nerve, and vessel. The all-embracing arms of general syphilis may destroy any function. Syphilis may destroy any special sense, produce local or general paralysis, acute or chronic mania, dementia, lunacy, idiocy, etc.

General Syphilis has been divided into a secondary and tertiary stage.

Secondary Syphilis includes all the earlier affections of the skin and mucous membranes, and many of the lighter affections of the eye, testicle, and other glands, with some of the varieties of nervous syphilis.

Tertiary Syphilis follows secondary, and consists of the later and the ulcerative skin-affections, the deeper lesions of connective tissues, muscle, bone, cartilage, and of the internal organs and all gummy deposit.

Secondary syphilis lasts often a year, sometimes two or more.

Tertiary syphilis (except as malignant) does not commence till after the expiration of at least one year from the appearance of the chancre. It may never show itself, or may appear after a period of health of many years, often five or ten, sometimes as late as fifty-two (Fournier). The whole secondary stage may be skipped under treatment, or even without treatment (Keyes).

Syphilides.—The most conspicuous symptoms of general syphilis affect the skin, and are known as syphilides or syphodermata. It may be papular, vesicular, or pustular syphilide (Keyes).

Prognosis.—Babies with inherited syphilis suffer more than any other class. The malady is often fatal with infants. Next in severity come the cases acquired in early manhood. Excesses of every sort, of wine, of women, of work, are liable to intensify the type and duration. All local irritations tend to call out eruptions at the points irritated. A child born with inherited syphilis may give no evidence of his malady until he is vaccinated, when an eruption may appear. A blister may call out dormant syphilis upon an adult. Patients who work much with the hands are more liable than others to eruptions of the palms. Tobacco chewed or smoked is proverbial for its power of originating and maintaining mucous patches in the mouth. The rough edge of a tooth may keep up a mucous patch of the tongue. When a bone breaks in a syphilitic subject, even in one with latent syphilis, it may fail to unite unless iodide of potassium be given. The prognosis is more unfavorable with bad hygiene (Keyes).

Duration of General Syphilis.—There is no disease so protean in its form as syphilis. Its symptoms simulate those of a vast number of other diseases. So true is this that it has passed into a proverb in the face of an obscure disease, "If you do not know what to do, treat the patient for syphilis." It is difficult to say when syphilis has ended or of deciding that it ever does end. Syphilis may occur in so mild a form that the patient may never know he has it. Syphilis may manifest itself as a mild eruption after chancre, disappearing possibly without treatment, and then lie latent for many years, as long as fifty-two years, to reappear. Keyes has a case where syphilis was latent for about forty years. Syphilis once acquired, stamps its impress upon the individuality of the patient and becomes a part of him and no power on earth in a given case can say when that impress disappears. A half century may pass away and the trail of the serpent be still visible. Yet syphilis may be cured. The virulence of syphilis disappears in the late tertiary period and during this period neither

the blood nor the pathological secretions will infect a healthy subject with the disease. Of the two diseases gonorrhœa and syphilis, the former sends more patients to the tomb than the latter. Keyes says that a man may get chancre, followed by some light eruption, consider it of no importance and get well spontaneously, marry and have healthy children, himself remaining entirely free from any evidence of the disease and dying in a green old age (Keyes).

Syphilis and Marriage.—If a patient presents himself with syphilitic chancre, at what period may he safely marry? He should not marry earlier than four years after chancre, and it is better not to marry for five years (Keyes).

Causes of the Protracted Duration of Syphilis.—1. Those living in bad hygienic surroundings, and giving themselves up to excesses of every sort. 2. Patients peculiarly susceptible to the disease. 3. Patients possessed of a strong tendency to gout or scrofula. 4. Those who treat irregularly.

General Characteristics of Syphilides.—1. Polymorphism of the earlier eruptions. 2. Rounded form of the patches of eruption, and of the ulcers. 3. Livid color, like the meat of raw ham, then coppery (pigmented), then gray, then white. 4. Absence of pain and itching. 5. The earlier eruptions are distributed habitually all over the body, are superficial, mainly congestive, and usually symmetrical. 6. Later eruptions in groups, involving the cutis vera. 7. Scales white, usually not adherent, superficial. 8. Crusts or scabs greenish, black, irregular, thick, adherent. 9. Ulcers with abrupt edges, adherent, not undermined, sluggish, and bleeding easily. 10. Cicatrix rounded, depressed, thin, non-adherent, white, smooth at first, shining, often pigmented, then clearing off from the centre toward the circumference (Keyes).

Secondary Incubation.—*Primary incubation* extends from the moment of suspicious contact to the appearance of the chancre. This period is about three weeks. Then primary syphilis is ushered in; but now there is another period of rest, wherein the disease seems to be purely local. This period] dates from the appearance of the chancre to the appearance of general symptoms, and is called *secondary incubation*. This period is on an

average six weeks, but may be shorter or longer. In rare cases the entire secondary period may be skipped, the disease first appearing in its tertiary form. This is termed delayed syphilis (Keyes).

Syphilitic Fever.—About a week or more before the appearance of any eruption, the patient is liable to have fever. The poison of syphilis reduces the number of red blood corpuscles, and produces more or less cachexia. This syphilitic hydræmia is constant, but may be slight. Fever is present in about two-thirds of all cases, and may be continuous, or it may occur only toward night, followed by sweating. With the fever there may be a sallow complexion, sunken eyes, melancholy, fatigue, shortness of breath, palpitation, and pain in various parts of the body. Among the pains of early syphilis, headache is prominent, and is usually worse at night.

The treatment is mainly tonic doses of mercury and hygienic (Keyes).

Alopecia.—Falling of the hair due to syphilis is of two kinds. Scabby sores on the scalp cause the hair-follicles to be destroyed, in which case the fallen hair is not reproduced. Ordinarily there is a thinning of the hair generally, not only of the scalp, but of the eyebrows, eyelids, whiskers, and to a degree of the whole body. In acquired syphilis the thinning of the hair is due to one of two causes (that is, when there are no scabs): 1. The syphilitic hydræmia which, like fever, impairs the vitality of the hair-papillæ. 2. Seborrhœa, the sebaceous matter clogging the hair-follicle.

Treatment.—Shampooing once a week with ammonia or borax in warm water (5j. to the Oj.) is useful, and rubbing the scalp nightly with a stimulating lotion, as follows:

R	Tinct. capsici ..	3ij.-v.	
	Glycerini. ...	3j.	
	Aque cologniensis	ad.....3j.	—M. —Keyes.

Indolent Glandular Engorgement. Is a diagnostic mark of the first importance in all doubtful cases of syphilis. The engorgement of the glands is indolent, painless. They are hard and vary in size from a small pea to a marble. The coincident indolent engorgement of certain glands is almost pathognomonic

of syphilis. These are the post-cervical, and epitrochlear glands on either side, just above and without the inner condyle of the humerus (Keyes).

Sore Throat.—Is a concomitant symptom of all stages of general syphilis. There are three type varieties: 1. A diffuse general redness, with or without ulceration in the early secondary stage. 2. A certain amount of chronic congestion, and brawny thickening about mucous patches or atonic ulcers in the late secondary and early tertiary. 3. Destructive ulceration from gummy deposit in the tertiary stage (Keyes).

General Treatment of Syphilis.—Is hygienic, tonic and specific.

Hygienic Treatment.—Includes all the ordinary laws of health. Regularity in eating and sleeping is all-important. Excesses of any kind are bad. Warm baths should be taken frequently. Catching cold and the use of tobacco are apt to induce and prolong mucous patches in mouth and throat. Change of air may be necessary to effect a cure. Mercury and the iodides will not cure all syphilis, as many practitioners seem to believe.

Tonic Treatment.—Cod-liver oil, iron, quinine and other tonics must be given, along with the specific remedies.

Specific Treatment.—Most of the syphilides, especially the earlier varieties, are self-limiting, and will get well under any treatment—one might even say in spite of treatment. No treatment may be better than over-treatment. Sarsaparilla has no curative power, but assists digestion and promotes the action of the skin, and pleases the patient.

The following formula is serviceable:

℞ Hydrarg. chlorid. corros.....gr. j.
 Aluminis3ss.
 Ext. sarsaparilla.....3ij.
 Glycerini.....3j.
 Syr. sennæ.....3iss.
 Spts. anisi.....3j.
 Ext. glycyrrhizæ.....3j.
 Aquæ forniculi—q. s., ad.....3vij.—M.

Sig.: A tablespoonful several times daily.

—Keyes.

Keyes says that the *succus alterans* has very little, if any, value in the treatment of syphilis, and that the quackish and

pretentious manner in which it is being forced upon the profession is enough to condemn it, and to make any honest man doubt its claims.

The Hot Springs of Arkansas. Keyes says the springs have a positive value in the treatment of syphilis. Patients broken down, cachectic, with faulty stomachs, who have syphilitic lesions which fail to yield at home because they can not tolerate a sufficiently high degree of medication—these are the patients to send to the hot springs. This is the only class of patients Keyes ever sends to the springs. The physicians who do well at the springs use most unsparingly mercury by inunction and iodide of potassium internally in enormous doses. The hot water internally and the baths enable a patient to tolerate large doses. For ordinary syphilis Keyes does not consider the springs of any value. They do not shorten the duration of the disease, prevent relapse, or cure it in any sense. The rule should be: Send no patients to the springs who do well under ordinary medication at home.

Treatment of Early Syphilis. Should be commenced as soon as the diagnosis of syphilis is positive. The rule in all cases of doubt is: Do nothing, but frankly tell the patient that he must wait; or if he has not the grace to appreciate pure honesty, and must have something to do while waiting, give a placebo while studying the nature of the sore and awaiting developments. All through syphilis mercury has power, an eliminating and controlling power, if not a curative one. The symptoms of syphilis are controlled by mercury better than by any other known drug, unless it be the iodidic preparations. Keyes has shown that moderate doses of mercury continued for any length of time not only do not debilitate, but act as a tonic in health, in disease, in syphilis, augmenting the number of red cells in the blood. In the early manifestations of syphilis mercury is specially potent. Under its kindly influence the chancre heals, the early eruptions fade. Mercury properly administered may be taken for years without any injury to the individual, or to his constitution, either immediate or remote (Keyes).

Bad Effects of Mercury. Occasionally a patient appears who tolerates mercury badly. He may be unable to take a certain form—the protoiodide, perhaps, because it causes pain and

diarrhœa—but can take another. Most people tolerate the bi-chloride kindly but a few patients cannot take any form of mercury without great mental and moral depression. Early syphilis also produces great depression mentally and morally. When a patient positively can not take mercury at all then we have to fall back upon the iodides, gold, the vegetable remedies, tonics, mineral waters and the like. The other bad effects produced by mercury are *salivation* and *diarrhœa* with *gripping-pain*. Mercurial tremor and cachexia occasionally occur after unjustifiable doses of the drug (see Salivation).

Diarrhœa with gripping pains is apt to come on in many patients who are fairly under the influence of mercury. If kept up, the patient loses appetite, runs down, and fails to derive benefit from his mercury. In these cases it is better to lower the dose or change the preparation (Keyes).

Elimination of Mercury from the Body.—Mercury gets out of the body chiefly through the intestinal canal, then through the salivary glands, the kidneys and the skin. Mercury may remain in the system for five and a half months after the patient has ceased taking it by inunction.

Methods of Administering Mercury.—Are in the order of their respective value to the practitioner: 1. By the stomach. 2. Local. 3. Inunction. 4. Fumigation. 5. Hypodermic.

5. *Hypodermic Injections.*—From one-sixteenth to one-eighth of a grain of sublimate dissolved in fifteen minims of water, is injected once or twice daily under the skin. Abscess may follow the puncture, or a hard, painful lump, very lasting sometime. This method can never become popular.

4. *Fumigation.*—This method is an excellent one, but not practical. It requires time and care. It is useful where prompt and kindly action of mercury is aimed at. Fumigations may be taken daily for three or four days, then once a week is usually enough to keep up the mercurial effect. The best method of fumigation is that found in Turkish bathing establishments. Calomel is the best for fumigation, because it volatilizes readily. About a scruple is enough for a bath. The powder should be placed upon a piece of tin over the spirit-lamp. The lamp and tin are placed beneath a cane-bottom chair, upon which the

patient sits naked and surrounded by blankets for fifteen minutes to half hour.

3. *Inunction*.—This is perhaps, of all the best means of exhibiting mercury. It spares the stomach, and is thorough and efficient. Its application is very dirty and it sometimes produces a local eruption. Keyes thinks that the method of inunction practiced at the hot springs is decidedly the best. The patient takes a long bath in hot water, and after drying himself, an attendant rubs in one-eighth or one-sixth of an ounce of mercurial ointment. The friction continues for twenty minutes. The next day this is repeated and the effects watched. Keyes does not use the oleates any more.

2. *Local Use of Mercury*.—Ulcerative cutaneous lesions do better under iodoform. Mucous patches upon the skin do well if kept dry and painted with bichloride solution or touched with the acid nitrate of mercury diluted, three to five times and dusted with calomel. Cleanliness is the first requisite in the treatment of lesions upon mucous membranes. The teeth should be cleaned, tobacco should be stopped and soothing mouth-washes of borax, alum, etc., may be used. The mucous patch may be touched with nitrate of silver, sulphate of copper or bichloride solution (gr. ij. to ʒj) but according to Keyes the acid nitrate of mercury pure and applied sparingly with the blunt end of a glass rod is the best. The pain it produces on some persons is a drawback to its use.

1. *Mercury by the Stomach*.—For treating general syphilis, the method by the stomach is the best. In this way it can be taken while traveling and without making the patient conspicuous to his friends, and it can be so used as to act as a tonic as well as specific. The forms used by the stomach are: the protoiodide, bichloride, blue-pill, and gray powder. Keyes rarely uses the biniodide, as it is too irritating to the intestine. Gray powder and blue-pill are good preparations when the protoiodide proves too irritating to the intestine. The bichloride is a very tonic preparation, and is more prompt than the others.

Tonic Method of Treatment by Mercury.—Consists in the use of mercury in such a way that the mercury, over and above its antisypilitic effect, shall act as a tonic—that is, shall increase

the number of the red blood-cells, and the general health and vigor of the patient. The outline of treatment is as follows: The standard fractional dose being selected—one-sixth grain of protiodide, and one-thirtieth grain bichloride—it remains to find the “full dose” and the “tonic dose.” The course is commenced by causing the patient to take one granule or tablet of the standard fractional dose immediately after each meal for three days—that is, three a day. For the next three days he takes four granules a day; then for three days, five a day; then for three days, six a day; then seven, and so on, adding one granule to the daily dose each fourth day, until pernicious medicinal effects of mercury begin to show themselves, which are, with the protoiodide, usually griping pains in the abdomen, and at least two free watery stools a day. When this occurs, write down the daily number of pills required to produce it, and name this number the “full dose.”

Half the full dose is the “tonic dose,” and sometimes one-third is all that is required. The “tonic dose” may be commenced with the idea of continuing it daily, month after month, for an average of about two and a half years. Under this tonic dose, Keyes says the patient will often enjoy better health than he did before he got his chancre. If new symptoms appear then is the time to add the reserve dose or to throw in some iodide of potassium for a time. This tonic course of treatment is eliminative not suppressive. By this course patients can be assured that they are taking mercury in the mildest manner, that it will not hurt them if they continue taking it for several years, and that it will not remain in the system (Keyes).

Treatment of Late Syphilis.—In purely gummatous deposits the iodides only are required.

Mixed Treatment.—When during the tonic course there is a call on the part of the symptoms for the iodides, they may be given while the mercury is continued.

The Iodides.—Often the iodides have to be used alone and pushed to the point of tolerance. The iodides are agents of the very highest value in syphilis, and in purely gummatous and many of the nervous symptoms their action in very large doses is most gratifying. The iodide of potassium is the most efficient

of the group. The disagreeable after-taste left in the mouth by iodide of potassium may be best masked by peppermint. The best time to take the iodides is during the third hour after eating, when the contents of the stomach are neutral and yet the organ is not empty. Even on an empty stomach the drug goes well if very largely diluted in milk.

The Dose of the Iodides. There is no limit. Keyes has given two and a half ounces daily. Begin with the small dose and work up gradually to the maximum dose.

The Bad Effects of the Iodides.—The metallic taste in the mouth is always much complained of when the dose runs high. The bad effects are five: 1. Possible indirect causation of salivation. 2. Iodism. 3. Irritation of mucous membranes. 4. Cutaneous eruptions. 5. Anæmia with nervous prostration and debility. 6. Albuminuria. Moderate doses of arsenic certainly moderate the bad effects of the iodides.

Duration of Treatment.—The duration of the virulence of the disease is believed to subside in the third year, and therefore the rational period during which to maintain continued treatment is about the same. It is impossible to say to a given patient after he has followed this course that he will never have a relapse; but he can be told that he has all the guarantee that medicine can afford him, and that if he does have late symptoms the great probability is that they will be mild, and will promptly yield to a mixed treatment (Keyes).

Syphilis of the Skin and Mucous Membranes.—The syphilides are those manifestations of general syphilis found upon the cutaneous envelope. Those occurring in *secondary syphilis* are: 1. Roseola. 2. Papular syphilide. 3. General pustular syphilide. 4. Pigmentary syphilide. 5. Bullous syphilide. 6. Vesicular syphilide. 7. Squamous syphilide. 8. Tubercular syphilide.

With these occur on the mucous membranes: 1. Erythematous patches. 2. Ulcers. 3. Mucous patches. 4. Scaly patches.

The *tertiary lesions* of the skin are: 1. Ecthyma. 2. Rupia. 3. Pustular syphilide in groups. 4. Tertiary ulceration. 5. Gummy subcutaneous tumor.

With these occur on the mucous membrane: 1. Mucous patches. 2. Scaly patches. 3. Deep chronic ulcers. 4. Destructive gummy ulcers (Keyes).

TAPE-WORMS.

Constitute the class *cestoda*.

Varieties.—*Tænia saginata*, beef tape-worm, is the form most common in this country; *tænia solium* is occasionally encountered while the *bothriocephalus latus* is rare (Bartholow). There was a time when nearly every malady was attributed to worms. *Tænia solium* also called "armed tape-worm" is the final development of an embryo, usually lodged in the flesh of some animal. It is from seven to thirty feet long, has a globular head and flat segments or joints. Each mature joint contains both male and female sexual organs (hermaphrodite). An ordinary sized tape-worm contains five millions of ripe ova.

The larval form of this worm is the *cysticercus cellulosæ*, the embryo being found in *pork* (measly pork). From one to forty may be present in the same intestinal tract, in small intestine and may hang far down into the large intestine; the terminal ripe segments are constantly falling off, and are discharged with the fæces. In a few months after swallowing the embryo, the tape-worm reaches considerable size.

Tænia Saginata, also called "unarmed tape-worm," is larger, stronger, and thicker than *tænia solium*. The larval form of this worm is the *cysticercus saginata*, the embryo being found in beef.

The *Bothriocephalus latus* is the largest worm infecting man. This worm sometimes reaches sixty feet in length. Its color, unlike the others, is a dull bluish-gray. Some suppose its embryo to be found in a fish or mollusk (Loomis).

Causes.—Since the introduction of the Russian method of curing diarrhoea by the use of finely-scraped raw meat, and the modern taste of eating rare steaks, etc., tape-worm has become more common. Their entrance into the intestinal tract is only effected through food and drink. Butchers, and those who handle raw meat, are more subject to them than others. Filthy

surroundings, squalor and personal uncleanness are conditions which favor their development. Tape-worms occur at all ages. *Bothriocephalus latus* is found chiefly in Scandinavia, Russia and Poland. *Tænia solium* occurs wherever the pig is domesticated. *Tænia saginata* is found wherever raw beef is used for food. *The Tænia* are not found among Jews and those who eat no pork (Bartholow, Loomis and Flint).

Symptoms.—*Tænia* produces no constant symptoms. The bowels are usually irregular. There may be colicky pains in the abdomen; the appetite is capricious, the face may be pale, the stomach feels weak and there is nausea and perhaps vomiting. The principal symptoms are: emaciation, notwithstanding an inordinate appetite; a feeling of lassitude; palpitation of the heart; salivation; faintness and itching about the nose and anus. The reflex symptoms are headache, dizziness, ringing in the ears, sudden sweatings and grinding of the teeth. Frequently a tape-worm produces absolutely no symptoms. The diagnosis can only be made by the discovery of detached joints or segments of the worms in the fæces. The length of time they remain in the intestine is by no means a fixed period; they have been known to exist there ten to twelve years and even longer. Persons frequently fancy they have a tape-worm. This is one of the notions of a hypochondriac and often becomes an insane delusion (Bartholow, Flint and Loomis).

Treatment.—Prophylaxis demands that all raw or “underdone” meat shall be avoided. Measly pork should be avoided. Stockyards should be at a distance from the water supply. Green vegetables, such as lettuce, should be thoroughly washed before eaten. Sulphate of magnesia should be given each morning for two mornings before giving the remedy, the *tæniafuge*. The diet should consist of milk, steak, tea and toast, for the day before and during the treatment. German practitioners cause the patient to take articles disagreeable to the parasite—such as garlic, onions, and salt herring—and direct a plateful of herring-salad, a savory dish made up of those articles, agreeable enough to Germans, but highly distasteful to tape-worms.

The most successful treatment of tape-worm Bartholow has any knowledge of is that of an ignorant barber, who has a secret

method which seems never to fail. He does not attempt any preparatory treatment, but administers his medicine (apparently a decoction of pomegranate) in the morning, the patient fasting, and retires from the house with the worm and his fee in the afternoon. For the destruction of tape-worms, many remedies have been proposed, such as turpentine, male fern (*felix mas*), kousso, pumpkin-seeds, and pomegranate or its active principle *pelletierine*. *Oil of turpentine*, in one-half or one-ounce doses, is one of the oldest and is very effective. *Male fern* (*felix mas*) is one of the oldest and best known vermifuges. The ethereal extract may be given in half-drachm doses, and the oil in drachm doses. Another effective tæniacuge is the *kousso*, the dried flowers of a tree in Abyssinia, where tape-worm is exceedingly common. Half an ounce of the powdered flowers mixed with water may be given in a dose. An emulsion of pumpkin-seed frequently acts efficiently. *Pelletierine* has been used with increasing success since its discovery in the proper doses (Bartholow, Flint and Loomis).

TETANUS.

Or *lock-jaw* is a disease characterized by paroxysmal tonic contractions of the voluntary muscles and due to exaltation of the reflex function of the spinal cord (Bartholow).

Causes.—Tetanus is usually traumatic and may follow the most trivial injury, as a splinter in the finger, the prick of a needle, the extraction of a tooth or perforating the ears for ear-rings, but it is more apt to develop after compound or complex fractures, lacerated, crushed and punctured wounds and wounds complicated by the presence of foreign bodies. It may occur after abortion or normal delivery and trismus nascentium is ascribed to the wound at the navel. When a wound is cicatrizing tetanus is more apt to occur. It is much more common in hot than in temperate climates. Exposure to wet and cold may develop it (Bartholow and Loomis).

Symptoms.—Tetanus generally comes on in from six to twelve days after the injury, but may be delayed three or four weeks or appear within a few hours. In the majority of cases it begins

with stiffness of the muscles of the neck and jaw. The affection is sometimes limited to these muscles and is then distinguished as *trismus*. The jaws are firmly shut by rigid contraction of the muscles and hence the affection is known as *lock-jaw*.

When caused by cold, there is chilliness, followed by fever, and stiffness of the neck is felt. The attempt to swallow excites cramp of the pharynx, and is difficult and painful. By degrees the other muscles are involved. The limbs are extended, the back arched (*opisthotonos*), less frequently the body may be bent forward (*emprosthotonos*), and still more rarely laterally (*pleurosthotonos*). The face assumes the *risus sardonicus*. Respiration becomes difficult. Spasms are excited by jars, by a mere touch, a current of air, etc. The pain is intense during the paroxysm. Between the paroxysms there are heavy ache and soreness. Just before death the temperature may reach 112° or 114° F. The body is bathed in a profuse sweat. Reflex excitability of the cord is increased to a high degree (Bartholow, Flint and Loomis).

Differential Diagnosis.—The absence of headache, delirium, and coma, and a normal temperature in the intervals between the attacks, will suffice to distinguish tetanus from any cerebral or cerebro-spinal inflammation. Absence of coma distinguishes it from epilepsy. In *strychnine poisoning* the muscles of the jaw, head and neck are last and least affected (Loomis).

Prognosis.—Tetanus usually terminates fatally before the tenth day (Loomis).

Treatment.—Bartholow thinks that bromide of potassium in doses of one to two drachms every four hours until the spasms cease, has been the most successful agent thus far employed. Opium given in large doses is sometimes successful. Recently, curare, nitrite of amyl, and hydrate of chloral (in forty-grain doses) seem to be the favorite drugs. Loomis is of the opinion that a highly nutritious diet, with alcoholic stimulation, is the best treatment. Ice applied to the spine has been found useful. Inhalations of ether and chloroform have given some relief. Light, currents of air, and noise should be excluded from the patient (Bartholow, Flint and Loomis).

THRUSH.

Called also *sprue* or *muquet*, is an aphthous disease of the epithelium of the mouth and tongue, due to the growth of the germs of the thrush-fungus, the *oidium albicans*. The mucous membrane has numerous small round whitish spots which gives to it a curdy appearance (Loomis).

Causes.—In children this disease occurs from birth to the second year, and is very rare after that time until adult life. These parasitic plants grow best in the presence of acids, and hence, the secretion of the mouth for the first six or seven months predisposes to it. Improper feeding, indigestion, gastro-enteritis and want of cleanliness in the care of nursing-bottles, spoons, etc., are the principal causes. In adults thrush occurs toward the end of any long exhausting disease, such as cancer or consumption (Loomis and Smith).

Symptoms.—The mouth becomes hot and painful. The child will not allow its mouth to be touched. There is salivation which is acid. The lips swell and become everted. Diarrhœa is frequent. The stools are acid. The acid causes an erythema about the anus (Loomis and Smith).

Treatment.—To avoid *sprue*, the mouth of the child should be washed with cool water each time after nursing. Borax is the most effectual remedy for thrush. After each feeding the mouth should be thoroughly cleansed with borax and glycerine, or a weak solution of carbolic acid, and sulphate of soda. The diet should be restricted to milk and lime-water. When there is emaciation, cod-liver oil and the lactophosphate of lime will be of service. The bowels must be regulated (Loomis and Smith).

TINEA.

Is the generic term for skin diseases produced by fungi. There are four diseases of the skin dependent upon the presence of four separate fungous growths, viz: I. *Tinea favosa*. II. *Tinea trichophytina*. III. *Tinea versicolor*. IV. *Tinea imbricata*. There are three varieties of *tinea favosa*, or honey-comb ring-worm, viz: (a) Favus of hairy parts. (b) Favus of non-hairy

parts. (c) Favus of nails. This disease which is decidedly contagious, usually makes its appearance in children, especially in those who are scrofulous, debilitated or uncleanly. The *favus of hairy parts* is usually seen only upon the scalp. There is more or less itching. The odor is characteristic and "mousey." The hairs are dull, dry, discolored and easily extracted. The fungus may be detected under microscope. The *favus of non-hairy parts* is in the shape of roundish spots which are bright red in tint, and at first very small but soon reach the size of a crown piece. It is elevated, itchy and scaly. It has yellow streaks. The favus of the nails is caused by scratching the affected part. The fungus gets under the nail and it assumes a yellowish tint (Anderson).

Treatment.—Favus was once thought to be incurable. Destruction of the parasite is the only treatment. A solution of bichloride of mercury is a good remedy.

There are four varieties of *tinea trichophytina*, or ringworm, viz: 1. Ringworm of the head. 2. Ringworm of the body. 3. Ringworm of the beard. 4. Ringworm of the nails.

Ringworm of the head is met with almost exclusively in children. It occurs in patches more or less circular and never implicates the whole head. The hairs are discolored, brittle, much thickened and twisted or broken off close to the scalp. Itching is moderate. It is very contagious.

Ringworm of the body commences as little round, rose-colored, slightly elevated spots, which soon become scaly and itchy. The circles of eruption are often several inches in diameter. It is contagious. Ringworm of the beard, called also *tinea sycosis*, is exclusively met with in adult males. It is almost always traced to a "foul shave" in a barber's shop. It is highly contagious. The color of the eruption is dusky red (Anderson).

Treatment.—The parts should be scrubbed night and morning with black soap. Such parasiticides as bichloride of mercury, carbolic acid, iodine, etc., may be used in the proper strength (Anderson).

Tinea Versicolor is an inflammatory affection, generally more or less itchy and scaly. There are small pin-head spots of eruption. On scraping the surface, scales come away loaded

with the parasite. It is a disease of adult life, and never congenital. The color of the patches of eruption is yellow or brown. The scales are scanty and very fine. *Tinea versicolor* always commences on the trunk. It is contagious (Anderson).

Treatment.—Is very simple and efficacious. Generally the application of a solution of bichloride of mercury (two grains to the ounce of water), or hyposulphite of soda (ʒi. to the ʒi. of water), to the affected parts twice daily, and continued for some time after the eruption has disappeared, is effectual. Mercurial or sulphur vapor baths have the same effect. A thorough scrubbing of the patient with black soap night and morning in a bath is efficacious. Instead of the black soap, the following mixture may be employed :

℞ Hydrargyri perchloridi.....gr. xx.
Saponis viridis.....ʒiij.
Spiritus rectificati.....ʒij.
Olei lavandulæ.....gtts. xx.—M.

Sig.: To be used night and morning, exactly in the same way as the black soap. —Anderson.

Tinea Imbricata.—Called also Tokelan Ringworm, is a scaly disease—much more like ichthyosis in its general appearances than any other disease. The scales run in concentric circles, and do not extend deeper than the mucous layer of the epidermis. The fungi are present in very great abundance (Anderson).

Treatment.—Same as ringworm of the body.

TINNITUS AURIUM.

Is not a disease but a symptom of disease. It consists of imaginary sounds and ringing noises in the ear. It is a frequent accompaniment of cerebral disorders. It is a sign of little moment, for it is encountered in so many different conditions, such as, disease of the cerebral vessels, congestion of the brain, Meniere's disease, affections of the heart, anæmia, etc. Its cause is sometimes wax in the meatus. Various drugs will produce tinnitus aurium in some persons (Da Costa).

Treatment.—Discover and treat the cause of the tinnitus aurium. The following formulæ may be tried:

℞ Acidi hydrobromici dil (10 per cent) ʒij.
Sig.: One-half to a teaspoonful in sweetened water thrice daily.
—Fothergill.

℞ Tinct. cimicifugæ℥iix.
Aquæ.....ʒij.—M.
Sig.: A teaspoonful thrice daily. —Patton.

TONSILITIS.

Is an inflammation of the tonsil. The most important varieties of tonsilitis are: 1. Acute simple tonsilitis, or catarrhal. 2. Follicular tonsilitis, or ulcerative. 3. Parenchymatous or suppurative tonsilitis.

Acute simple tonsilitis is characterized by redness with moderate swelling of the tonsils and an inflammatory exudation from the mucous membrane, composed of mucous, pus-cells, and serum. This simple tonsilitis is present in most cases of acute pharyngitis, or ordinary sore throat, and is a trivial affection.

Acute follicular tonsilitis, or ulcerated sore throat, is of considerable clinical importance. In this affection the inflammation involves not only the mucous membrane covering the surface of the gland, but especially that lining the crypts. The tonsils present little white patches. These white deposits extend into the crypts or follicles. Acute follicular tonsilitis is often attended by severe constitutional disturbance. The symptoms at the onset may be as severe as in diphtheria. There may be a chill or chilly sensations. The temperature may reach 104° or 105° in twenty-four to forty-eight hours. There are often headache, anorexia and insomnia. The patient complains of dryness and soreness of the throat and pain on swallowing. Usually within three to five days the fever and other symptoms subside and recovery is rapid. After the attack there may be marked prostration. The prognosis is always favorable. It may be mistaken for diphtheria.

Parenchymatous tonsilitis, or "quincy sore throat," sometimes called phlegmonous pharyngitis, is an inflammation of the parenchyma of one or both tonsils. It may terminate in resolu-

tion, but usually it goes on to suppuration, constituting the disease called *suppurative tonsilitis* or *quinsy* (Flint and Loomis).

Causes.—*Quinsy* is rare in those under twelve years of age, but is more common in youth than in adult life. Certain atmospheric influences predispose to it. It “runs in families.” Scrofula and syphilis favor its development. Exposure almost always precedes an attack. One attack predisposes to others. Tonsilitis often occurs with scarlet fever, measles, and typhoid fever. *Follicular tonsilitis* with ulceration is usually preceded by disorders of digestion, and seems to depend on this for its origin. A relationship has been supposed to exist between the ovaries and tonsils, but it is by no means well defined (Bartholow, Flint and Loomis).

Symptoms.—There may be a chill or chilly sensations at the onset, followed by fever, (103° to 105° F.) The tongue and throat become dry; there are heat, pain, and swelling in the tonsil; the fluids are often regurgitated through the nostrils. Thick mucus is expectorated. The breath is offensive, the jaws are often immovable. There is a peculiar nasal tone to the voice. The patient is unable to sleep, has a sense of suffocation, and sometimes is delirious. In four or five days, something is felt to give way in the throat, and suddenly the patient is entirely relieved by the discharge of fetid yellow pus. Convalescence is rapid. The abscess in the tonsil may open at one or at several points. Much suffering is experienced (Flint and Loomis).

Prognosis.—Is always good. Chronic enlargement of the tonsil may result. The entire duration of the disease is eight days. Death in rare instances may result from suffocation, exhaustion, or œdema glottidis (Loomis).

Treatment.—A saline laxative should inaugurate the treatment unless the bowels are relaxed. Tincture of aconite-root (gtt i–ij) may be given every hour or two for the period preceding pus-formation. At the onset, calomel, in the dose of three to five grains, is superior to all other remedies. When pus has formed quinine is the best agent. Acetanilid and antipyrin are good remedies to reduce temperature. Opium or its alkaloids should not be given in quinsy. The local treatment is important. A hot or cold wet pack about the neck affords relief.

A gargle of hot milk and water, used every few minutes, lessens inflammation and swelling. Sometimes ice and cold water are more grateful. Bicarbonate of sodium in powder, placed on the tonsil gives great relief. When suppuration occurs, warm applications are to be preferred. When the tonsils are much swollen they may be scarified. When pus forms it should be evacuated. Astringent gargles at the onset may in some cases arrest the disease. Loomis says "I have been able in a large number of cases to abort a quinsy by a twenty-grain dose of quinine administered at the time of the chill followed by a large dose of bromide of potassium." Guaiacum has long been celebrated for its power to arrest tonsillar inflammation, in scruple doses. Fluid extract of ergot is supposed to have specific power to arrest the disease (Bartholow and Loomis).

TOOTHACHE.

Is a localized dental pain, and varies in character according to the part of the tooth involved. A darting pain betokens irritation and probable exposure of the pulp. A violent, throbbing pain points to general inflammation of the pulp. In alveolar abscess, the pain is dull and throbbing (Bryant).

Treatment.—Dentists employ arsenic as an escharotic to destroy the exposed sensitive pulp of decayed teeth. A strong infusion of capsicum applied on lint to the aching tooth is very effective. Chloral, rubbed up with an equal weight of camphor, and rubbed gently in externally or put into the cavity of an aching tooth, gives prompt relief in some cases. A few drops of chloroform on cotton-wool, inserted into the hollow of a decayed aching tooth, often gives permanent relief. Equal parts of chloroform and creasote constitute a useful application in toothache. A mixture of equal parts of collodion and carbolic on a small piece of cotton-wool inserted into the hollow painful tooth soon gives relief. A solution of alum in nitrous ether is said to be an effective application in toothache. Dr. Duckworth reports that toothache may be quickly allayed by holding a solution of carbonate of soda in the mouth. A drop or two of oil of cloves inserted into the cavity of an aching tooth soon stops the pain.

Xanthoxylum (prickly ash) is a domestic remedy for toothache (Bartholow and Ringer).

TYMPANITES.

Is not a disease but a symptom. It is a flatulent distention of the bowels. Great prominence of the abdomen due to flatulent distention of the bowels, is, if at all persistent, very apt to be mistaken for ascites. But the large abdomen yields not a dull, but everywhere a tympanitic sound and there is no fluctuation. In most cases the gas which causes the distention, is derived from putrefactive or fomentative changes in the ingesta. The accumulation of gas within the stomach occasions painful distension, and rarely may cause sudden death. The habit of swallowing air may cause tympanites of the stomach (this corresponds to wind-sucking in horses). An habitual tympanites of the stomach occasions in some persons, after the ingestion of liquid, a succussion sound in walking resembling the sound frequently heard in horses. This is a source of much annoyance and mortification, especially to women. It may be avoided by taking into the stomach only very small quantities of liquid at a time. Some persons suffer from an habitual tympanites. Females are more liable to it than males.

Treatment:

℞ Olei terebinthinæ.....℥ij.-viij.
 Olei ricini.....℥ij.
 Vitelli ovi.....no. j.
 Decocti hordei.....℥viij.-xvj.—M.

Ft. enema.

Sig.: Inject into the bowel.

—Bartholow.

℞ Olei terebinthinæ.....℥j.
 Olei olivæ℥iss.
 Camphorægr. xx.
 Decocti avenæ.....℥viij.—M.

Ft. enema.

Sig.: Inject into the bowel.

—Copeland.

℞ Pulv. capsici.....gr. vj.-xxiv.
 Sacchari lactis.....gr. xxx.—M.

In pulv. no. xii. div.

Sig.: A powder every four hours.

—Phillips.

TRICHINOSIS.

Is a parasitic disease. The parasite is called *trichina spiralis*, in the form of a minute worm, measuring about one-thirty-fifth of an inch in length, which enters the human system through the intestinal tract after the ingestion of trichinous flesh (Loomis).

Causes.—Trichinosis in human beings results almost exclusively from eating trichinous pork. The raw flesh is most dangerous. Sausages, smoked ham, quickly broiled ham, or any form of pork that has not been subjected to a moist heat of 170°, is liable to induce it. Each trichina may give birth to a thousand young (Loomis and Flint).

Symptoms.—Are first gastro-intestinal and then muscular; associated with these there is more or less fever. Nausea, vomiting, vertigo, anorexia and a feeling of malaise come on. There is almost always diarrhoea. After a short time there are wandering pains in the limbs, which become stiff and painful to the touch and the muscles are swollen and rigid. In from four to ten days oedema of the eyelids perhaps of the entire face occurs. The temperature is 101° to 105°; the pulse 110 to 120. There is photophobia and movements of the limbs or of the eyes are accompanied by excruciating pain. The pain in the limbs becomes so great that the patient cannot sleep. Oedema of the lower extremities is common. The perspiration is copious, the diarrhoea exhaustive, the limbs are paralyzed and the patient lies in a state of utter helplessness. Recovery occurs in from four to five weeks after the onset of the disease. Death may occur in the fourth week (Loomis and Flint).

Differential Diagnosis.—Trichinosis may be confounded with typhoid fever, but a microscopic examination of small portions of the muscular tissue will afford a positive diagnosis (Loomis).

Treatment.—Preventive treatment consists in eating no pork that has not been so prepared as to kill any trichinae that might exist. We know of no means of destroying the trichinae after they have once entered the muscles. Purgatives may be given early in the disease. Good diet, stimulants, quinine and iron are of service (Loomis).

TONGUE-TIE.

Is occasionally met with. It is due to a tying down of the tip of the tongue by the *frænum linguæ*, which prevents the infant from projecting the organ beyond the gums, thereby interfering with suckling (Bryant).

Treatment.—It is easily remedied by dividing the *frænum* perpendicularly downward behind the gum with a pair of blunt-pointed scissors, the point of the tongue being elevated with the finger (Bryant).

TRACHOMA.

Called also *granular conjunctivitis*, is characterized by hypertrophy of the conjunctiva, either in disseminated spots or diffused. The trachoma granules are small, rounded masses of various sizes. On everting the lids, we find little bodies of the size of a rape-seed lying beneath the conjunctiva. The patient complains of slight irritation of the lids and inability to use the eyes for a long period; the eyes feel weak at night; light is unpleasant; the lids are sticky (Noyes).

Treatment.—Touch the lids lightly once a day with a crystal of sulphate of copper or alum, with solutions of tannin and glycerine (gr. x.-xxx. to ʒj.), or with a solution of nitrate of silver (gr. v. to ʒj). The redundant masses of granules may be squeezed by forceps (Noyes).

TYPHOID FEVER.

Is an acute febrile affection, self-limited, feebly if at all contagious, and characterized by a peculiar eruption on the abdomen, by a form of diarrhoea, by stupor and low delirium, by thickening and ulceration of Peyer's patches, by infiltration and softening of the associated mesenteric glands, and by swollen spleen (Bartholow).

Typhoid is the most prevalent of all fevers except malarial. It may be developed in all latitudes and in all countries, but it prevails more in the temperate zones than in the torrid or frigid. The Germans call it *abdominal typhus*, *gastric fever*, or *ileo-*

typhus. It is also called *common continued fever*, *enteric fever* and *pythogenic fever* (Loomis).

Morbid Anatomy.—When the disease is fully established the *blood* becomes darker in color and coagulates imperfectly. With these blood changes, parenchymatous degeneration takes place in the organs and tissues of the body. But the characteristic lesions of typhoid fever are seated in the lymphatic structures of the intestine namely, Peyer's patches and the solitary follicles. Corresponding to the intestinal changes are alterations in the mesenteric glands.

Intestines.—Four stages of the morbid process in the intestine may be distinguished and they correspond very closely with the four weeks of the disease. In the *first week* of the disease there are congestion and inflammation of the mucous membrane of the small intestine with a medullary infiltration of Peyer's patches and the solitary follicles. As a result of these processes, there is hyperæmia and swelling of the mucous membranes and the affected glands become enlarged and elevated from one to two lines above the mucous surface. These glands assume a dark-red or reddish-gray color marked with fine white striations and present the so-called "shaven beard" appearance. These changes begin and are most extensive in the glands nearest the ileo-cæcal valve. The number of patches involved varies from four to five near the valve to twenty or thirty throughout the whole intestine. In the *second week* the hyperæmia and catarrh of the mucous membrane subside and the swelling and infiltration of the solitary follicles and Peyer's patches increase. The "shaven beard" appearance disappears. During this week necrotic changes in the swollen follicles and patches take place. The casting off of the necrotic tissue results in the formation of the typhoid ulcer. In the *third week* the process of ulceration is completed. The entire gland may slough uniformly and at once form the complete ulcer.

Usually the sloughing and removal of the necrotic tissue does not take place until the third week of the disease. The necrotic process may extend and involve the muscular tissue, and end in perforation of the peritoneal covering. These ulcers may be developed in the jejunum, ileum, stomach and the large

intestine. In the lower part of the ileum, at the ileo-cæcal valve, the ulcers are usually of large size and elliptical with their long axis corresponding to that of the intestine. In the jejunum, stomach and large intestine they are usually round and of small size. Sometimes the ulcers are hemorrhagic. Those ulcers resulting from necrosis of the solitary follicles are round. Cases have been described in which the ulcers were fully formed on the seventh or eighth day of the disease. In the *fourth week* the process of cicatrization is commenced. It may begin in the third week of the disease and continue during convalescence. Gradually the swollen edges of the ulcers subside and granulation tissue springs up from their base. The gland structure is never regenerated. These cicatrices have little tendency to cause stenosis of the intestinal lumen.

Perforation of the intestine is liable to occur in one or more of the ulcers. It occurs in about one per cent. of the cases of typhoid fever, and in about eight per cent. of the deaths from this disease. It is most frequent between the third and fifth week of the disease. It is rarely caused by the primary sloughing, but is due to secondary ulceration after the separation of the slough. The opening in the peritoneal coat may be of considerable size or it may be no larger than a pin's point. Profuse hemorrhage may occur from the primary sloughing or from the secondary ulceration.

Mesenteric Glands.—More or less enlargement of the mesenteric glands is always associated with the intestinal lesions. They are secondary to the changes in the intestinal glands. The enlarged glands vary in size from that of a hazel-nut to a small hen's egg. In rare instances these glands slough and cause peritonitis.

Spleen.—The organ in which parenchymatous degeneration occurs earliest and most extensively is the spleen. It is enlarged often two or three times its normal size. The enlargement goes on rapidly until the third week, and is due to congestion and to hyperplasia of the cellular elements. It is dark-red in color and softened. Hemorrhagic infarctions and rupture of the capsule of the spleen may take place. *These changes in the spleen take*

place, in a greater or less degree, in ninety-eight cases out of every hundred.

Liver.—The liver is usually somewhat swollen, pale, and softened. The hepatic cells are in a condition of parenchymatous degeneration.

Kidneys.—Parenchymatous degeneration of the renal epithelium is the rule. An acute nephritis may occur.

Heart.—The heart becomes soft and flabby, and is of a grayish or brown color. The parenchymatous changes which take place in the heart are more marked than those of any other organ except the spleen. The heart loses its normal outline, and when removed from the body the walls of its cavities readily fall together. Vegetations sometimes form on the valves and chordæ tendineæ of the heart, and in some cases the first sound will be absent.

Lungs.—Changes in the lungs are present in nearly all cases of typhoid fever. Congestion and inflammation of the bronchial mucous membrane are so constantly present, that Dr. Stokes proposed to call typhoid fever *bronchial typhus*. Hypostatic congestion and pulmonary œdema are common. Pneumonia is a frequent complication.

Larynx.—Ulcerations of the larynx, the mucous membrane of the mouth and pharynx may occur.

Salivary Glands.—The salivary glands enlarge, become firm and tense, and there are a proliferation and parenchymatous degeneration of their cells. These changes cause a diminished salivary secretion which is so marked and constant in typhoid. Abscess of the parotid gland may occur in typhoid.

Brain and Nervous System.—No changes have been discovered in the central nervous system to explain the mental disturbance which characterizes this disease. But it is reasonable to infer that in a disease, where such severe functional disturbances exist, there must be constant and definite parenchymatous changes.

Stomach.—Softening and degeneration of the glandular structure takes place in the stomach and this gives rise to disturbance of digestion.

Muscles.—The voluntary muscles undergo a hyaline or waxy degeneration (Flint and Loomis).

Causes.—Typhoid is endemic in every quarter of the globe. It is possible for it to prevail as an epidemic. It prevails more in the autumn than in any other season of the year and for this reason it has been called *autumnal fever*. It is stated that a warm, dry summer favors the occurrence of the disease in the following autumn. Age must be regarded as a predisposing cause of typhoid fever. It occurs most frequently between the ages of fifteen and twenty-five, next between ten and fifteen and next between twenty-five and thirty. It is rare in infancy and after fifty. As a rule persons are in good health when attacked. Pregnant women when attacked with typhoid fever generally abort. Some persons are more susceptible to the typhoid poison than others. The typhoid bacillus is the specific cause of the disease. This micro-organism may grow readily outside of the body, as in the soil, on vegetables, milk, meat-infusions, or in liquids containing sufficient nutriment, and by the formation of spores it may preserve its vitality for a long time. There is no evidence that the typhoid bacillus exists in the exhalations from the patient. Typhoid fever is communicable but not in the same way as the strictly contagious diseases, such as small-pox, scarlet fever, etc.

Washerwomen frequently contract the disease from washing linen soiled with typhoid excreta. It is probable that the typhoid stools are the chief source of infection of a locality in which the disease becomes endemic. The following instance proves this: A stranger ill with typhoid fever came to a little settlement called North Boston, consisting of nine families. Up to this time typhoid fever had never been known in that neighborhood. In a few days the stranger died, and in a month, more than half the population, numbering forty-three, had been affected, and ten died. Of the nine families, one family escaped which obtained its water from a source different from the others, which used a common well. The typhoid bacilli have been found in the drinking-water of regions where typhoid was prevailing as an epidemic. Such water may be perfectly clear and apparently pure. Sometimes the water of a well used for drink-

ing purposes becomes infected by a communication or leakage between it and a privy-vault, cess-pool, sewer, or drain. A number of typhoid epidemics have been traced to the milk-supply. Here it is probable that the vehicle of infection is the water used in cleansing the cans or in diluting the milk. The period of incubation varies from fourteen to twenty days (Flint and Loomis).

Symptoms.—Typhoid fever is developed gradually as a rule, and is insidious usually in its approach. The patient feels uneasy and uncomfortable, has no pain, but feels that he is about to be sick. The premonitory symptoms are: Headache, more or less aching of the limbs, “a tired feeling all over,” chilly sensations, loss of appetite, occasional nausea and vomiting, epistaxis in most cases, diarrhœa or constipation. By the fifth or sixth day the patient is compelled to take to his bed. *Countenance* has nothing peculiar at first, except it is flushed, but later the expression is dull and there is an appearance of stupidity. By the second week, there is a pale, olive, leaden look, and usually there is a small rose-colored spot in the centre of each cheek. The face does not assume the dark mahogany color seen in typhus, but in the advanced stages of the fever it has more of the hectic flush of phthisis. The whole surface presents a slight capillary congestion, like that produced by the action of cold; and in some cases the hue of the surface is slightly dusky. This capillary congestion is caused by paresis of the peripheral arteries.

Nervous System.—The symptoms referable to the nervous system are: 1. Headache which is more or less complained of during the first week, but usually ceases during the second week. It is not violent, but a dull heavy pain. Pain in the back and limbs, and a general aching of the whole body is also complained of.

Delirium is manifested in the majority of cases. The delirium rarely comes on before the second week of the fever and is most active at night. The delirium is usually the “low-muttering,” but it may be violent. Persisting, active delirium is an extremely unfavorable symptom. The mental condition is characterized by hebetude, indifference, and inanimation. Sensibility

is diminished and perception blunted. The state in which the patient may be said to be both sleeping and wakeful, is called *coma-vigil*. Other nervous symptoms are: grasping at invisible objects or *carphologia*, pulling up of the bed linen, visible twitchings of the muscles of the face and of the extremities, sub-sultus tendinum, rigidity of the muscles of the neck or extremities and convulsions. These denote gravity of the disease.

Digestive System.—Anorexia is the rule. Thirst is prominent. The tongue from the very outset is covered with a light, white coat. At the end of the first week it becomes red upon its sides and tip and dry in centre. In the second and third weeks the tongue becomes more heavily coated, the coating becomes brown and dry, and *sordes* collect on the teeth. At any period in the course of the disease the tongue may suddenly clear off and present a shiny red, beef-colored appearance. The tongue and lips may become dry, cracked, and fissured and bleed. Nausea and vomiting are quite common during the first week of the fever. *Diarrhœa* is one of the characteristic symptoms, but is not always present. The discharges are of a yellowish-green color, described as “pea-soup discharges.” Sometimes they resemble coffee-grounds. The diarrhœa usually appears the second week, but in some cases it is present at the very outset of the disease and in others it does not appear until the third week.

Intestinal Hemorrhage.—Hemorrhage from the bowels occurs in about five per cent. of the cases. It may be slight, moderate, or profuse. These hemorrhages usually occur in the second and third weeks, and are accompanied by a sudden fall of temperature.

These three symptoms, namely, meteorism, or tympanites, iliac tenderness and gurgling, especially the two former conjoined with diarrhœa and ochre-colored discharges—form a group of symptoms highly diagnostic of this form of fever. They may all be absent.

Perforation.—Perforation of the intestine takes place in between one and two per cent. of all cases, and in ten per cent. of fatal cases. It takes place late in the disease or during convalescence and sometimes even after apparent recovery. It occurs as often in mild as in severe cases. Perforation gives rise to per-

itonitis, which is generally developed abruptly. The sudden occurrence of pain diffused over the abdomen, increased tympanitic distension rigidity of the abdominal walls, great prostration, a rapid, feeble pulse, a sunken anxious expression of countenance, nausea and vomiting quickly followed by coldness and blueness of the extremities and other signs of collapse point to peritonitis from perforation. Peritonitis does not invariably denote perforation. It may be caused by rupture of a mesenteric gland.

Skin.—Of the symptoms referable to the skin, the most important is a characteristic *eruption*. It makes its appearance between the sixth and twelfth days of the disease, and remains visible from eight to fourteen days. It consists of isolated papules generally limited to the trunk, of a rose or pink color, called by Louis lenticular rose-colored spots. The spots are slightly elevated and the redness momentarily disappears on light pressure. The number of spots varies from two or three to many. Each spot remains visible for three days and then disappears. The eruption is not invariably present. Jenner states that he found the eruption present in one hundred and forty-eight out of one hundred and fifty-two cases. Bed-sores and gangrene are liable to occur in situations exposed to pressure.

Respiratory System.—Slight or moderate cough is almost invariably present, proceeding from sub-acute bronchitis. Pneumonia is a frequent complication. Hypostatic congestion and œdema of the posterior portions of both lungs are incident to the feeble circulation in the latter part of the disease. *Epistaxis* is a symptom of diagnostic value early in the disease.

Pulse.—The danger is usually considerable if the pulse for many days exceed 120 per minute. A sudden and considerable increase of frequency of the pulse often denotes the occurrence of pneumonia or peritonitis. The pulse is quick and vibratory and often dicrotic. Failure of heart-power is indicated by an increase in the frequency and feebleness of the pulse.

Temperature.—There is a daily increase of temperature for the first five or eight days. This gradual rise of temperature from day to day during the first week is diagnostic of typhoid fever. There are morning remissions and evening exacerbations. The temperature of typhoid fever does not always pursue the

typical course. The temperature may reach its acme by the end of the third day, and may be of a remittent or intermittent type. A high elevation of temperature in the morning, 106° to 108° F., indicates the approach of death. A sudden and considerable fall of temperature, other symptoms not denoting convalescence or improvement, is unfavorable. This often indicates hemorrhage from the bowels.

Special Senses.—The eye assumes a dull expression and the pupil is dilated. The sense of hearing is always more or less impaired. The sense of taste is perverted and patients are unable to distinguish between bitter and sweet. *Hyperæsthesia* may be present in hysterical females.

Emaciation is more marked and rapid in typhoid than in any other form of fever.

Mild Typhoid Fever.—In the mild type, the fever runs its regular course but is of low grade. Some of these cases are so mild that the patients are not confined to the bed, and are called "walking cases" of typhoid fever. All the symptoms of these cases are mild. These patients should take to the bed and remain there until convalescence is established. The *abortive form* of *typhoid fever* is ushered in with all the symptoms of a typical case; but by the end of the second week the patient passes on to a state of complete convalescence. If only a moderate amount of typhoid poison is introduced into the system, a mild or an abortive type of fever will be developed.

Duration of Typhoid.—Of forty-two cases ending in recovery analyzed by Flint the average duration was sixteen days. The maximum duration was twenty-eight days and the minimum five days. Of forty-five fatal cases of Flint's the mean duration was a fraction more than fourteen days, the maximum being twenty and the minimum nine days. The average duration of convalescence is between one and two weeks. A temporary fever often accompanies the change of diet from liquid to solid animal food.

Relapses of typhoid fever sometimes occur. A return of the fever may take place after ten days to two weeks from the date of convalescence, and the patient passes through a second career, the eruption and other characteristic symptoms being reproduced. The duration of the second career is usually shorter and the

severity greater than the first, but a fatal termination is rare. The cause of the relapse is not known. Some hold that all relapses depend upon a new infection. Others hold that a part of the typhoid poison has remained in the system, undeveloped during the primary attack. In some cases, apparently, the relapse has been brought on by indiscretion in diet, or exercise (Bartholow, Flint and Loomis).

Differential Diagnosis.—The presence of fever with evening exacerbations and morning remissions, headache, diarrhoea, abdominal tenderness, and the presence of the characteristic rose-colored spots are sufficient for a diagnosis. Typhoid fever may be confounded with *typhus* and *relapsing fevers*, *continued malarial fever*, *acute tuberculosis*, *pyæmia*, *septicæmia*, *pneumonia*, *gastro-enteritis*, *trichinosis*, *diffuse parenchymatous hepatitis*, and *acute meningitis*.

Typhus fever is sudden in its advent, while typhoid is slowly developed.

In typhus fever, there is a chill at the commencement, and severe pain in the head; great muscular weakness; the temperature rises rapidly to 104° or 105° F., before the end of the second day; emaciation is slight; the eruption appears upon the arms and chest on the fifth or sixth day; the spots are numerous and of a dark pinkish hue; constipation is the rule; the abdominal symptoms of typhoid are never present in typhus fever. Typhus fever is contagious, typhoid fever is non-contagious. Typhus is generally epidemic, typhoid is always endemic. In *typhus*, the dusky face, contracted pupils, and peculiar smell will distinguish it from typhoid.

In typhoid, the slow invasion, the “step-ladder” rise in temperature, the eruption, the characteristic diarrhoea, and the continuance without remission or intermission will be sufficient to distinguish it from relapsing fever.

Acute miliary tuberculosis is to be discriminated from typhoid by the notable frequency of the respirations, the prominence of the cough, hæmoptysis in some cases, the abundance of sub-crepitant rales; by marked lividity and presence of choroid tubercles, and by the absence of the abdominal and other events of typhoid.

Acute meningitis is distinguished from typhoid by more intense headache by intolerance of light and sounds, early and active delirium by frequent vomiting, by rigidity of the muscles at the back of the neck and by somnolency and coma succeeding the delirium and by depressed abdomen. In *pyæmia* and *septicæmia* the surface of the body has a jaundiced hue, there are no spots, the fever is irregular, recurring chills followed by profuse sweatings take place early. *Pneumonia* with typhoid symptoms is sometimes mistaken for typhoid fever. The physical signs, the cough, the characteristic pneumonic expectoration, no eruption, etc., will distinguish it from typhoid (Bartholow, Flint and Loomis).

Prognosis.—Death may occur at any stage of this fever. The average mortality from typhoid is about ten per cent. The prognosis is always bad in those who are fat. Complications render the prognosis more unfavorable. Death rarely occurs before the fourteenth day. The direct causes of death are: *toxæmia*, *asthenia*, *suppression of the urine*, œdema of the lungs, exhaustive diarrhœa, intestinal hemorrhage or perforation and peritonitis (Bartholow, Flint and Loomis).

Treatment. The typhoid stools should be thoroughly disinfected as soon as passed, and should never be emptied into a privy or water-closet, but into trenches. The bed-linen should be disinfected and kept scrupulously clean. Typhoid fever cannot be aborted by any remedy known. The patient should be placed in a large and well-ventilated apartment. Only the nurse and attendants should be allowed in the room. Milk is the proper diet, and *fruits are not to be allowed in any case*. Frequent sponging of the body with tepid water will be of service. When the temperature reaches 104° or more, sponge the body with cold water. Of the internal antipyretics, Loomis prefers antifebrin in five to ten grain doses three times daily.

Stimulants. When signs of failure of heart-power begin to manifest themselves, stimulants are indicated. If under their use the tongue becomes dry, the patient more restless, the delirium more active, the temperature higher, and the pulse more frequent, it is very certain that stimulants are contraindicated; *and vice versa*. Bartholow's experience is, that the administra-

tion of iodine has a favorable effect on the course of the disease, and he has used with decided success the combination of iodine and carbolic acid (\mathcal{R} Tinct. iodi \mathfrak{z} ii., acid carbolicum \mathfrak{z} i.—M. Sig.: One to three drops three times a day).

Diarrhœa.—For the diarrhœa, there is but one remedy which can be relied upon, and that is *opium*.

Tympanites.—Turpentine stupes to the abdomen, and turpentine internally and by rectum will give relief to the tympanites.

Intestinal Hemorrhage.—Can best be controlled by an ice-bag to the abdomen, and the administration of opium in small doses frequently.

Peritonitis.—Is best treated by opium.

For the *bronchitis*, carbonate of ammonia is very effective. For the active *delirium*, opium and sedative remedies. For bed-sores, cleanliness and the proper dressings (Bartholow, Flint and Loomis).

TYPHUS FEVER.

Is a febrile affection, self-limited, contagious, usually prevails epidemically, and characterized by profound adynamia, a peculiar petechial eruption, favorable cases terminating by crisis at the end of the second week. It has received a great variety of names, such as *ship fever*, *hospital fever*, *jail fever*, *camp fever*, *petechial fever*, *putrid fever*, *Irish ague*, *brain fever*, *spotted fever*, *continued fever*, etc. (Bartholow and Loomis).

Morbid Anatomy.—In typhus the abdominal lesions which are characteristic of typhoid fever are wanting. The small intestine may have the *shaven-beard appearance*. There are no lesions peculiar to the disease and constantly present. The spleen is usually large, soft, and of a dark, bluish-red color. The blood is unnaturally dark and fluid. Hypostatic congestion of the lungs, bronchitis, lobular pneumonia, pulmonary œdema, cerebral congestion, and parenchymatous degenerations are frequent (Flint and Loomis).

Causes.—Typhus is seen in this country only at our seaport towns. It depends upon a specific poison, of whose exact nature we are ignorant. This poison is communicated from the sick to

the healthy mainly by personal contagion—that is, the recipient of the poison must be brought in contact with the exhalations of the infected person. Where there is free ventilation, contagion is confined to narrow limits. Typhus poison passes into the body mainly through the respired air. This disease is not indigenous to this country. It is imported from Ireland, Italy, and Russia, which seem to be the great endemic centres.

It has been proved by actual experiment that the contagious distance of small-pox in the open air, does not exceed two and one-half feet and it would seem that the contagious distance of typhus fever is even less. It requires the concentration of the poison and prolonged exposure to render it infectious. The period of incubation is about fourteen days. A single patient in a spacious, well-ventilated apartment seldom communicates the disease. Typhus fever prevailed in New York City as an epidemic in 1861 to 1864; 1428 cases were admitted into Bellevue Hospital during this time (Bartholow, Flint and Loomis).

Symptoms.—Its advent is usually sudden. As a rule, the onset is marked by a distinct chill, followed by a severe and steadily increasing headache and by pain in the back and limbs and by great muscular weakness. The face has a dusky or dingy hue. In some cases there are coma-vigil delirium, stupor, *pin-hole pupil* and convulsions. The tongue is covered with a thick brown or black coating. Sordes collect on teeth and lips. A characteristic eruption appears about the third to the fifth day. It is a macular not a papular eruption. The spots become of a dull, dingy or dark-red color, and do not disappear on pressure. They are smaller than the papules of typhoid. They do not come and go like the rose papules of typhoid. The odor from typhus patients is stated to be characteristic. The temperature the first day may rise to 104° or 105° F., and remain so the first week. The pulse ranges from 100 to 130. Loss of muscular strength is so great that the patient is unable to turn in bed. The duration of typhus is about fourteen days. One attack serves to exempt from future attacks (Bartholow, Flint and Loomis).

Prognosis.—In certain epidemics the mortality runs as high as forty to fifty per cent. Average fifteen per cent.

Treatment.—The same means of treatment pursued in typhoid are equally applicable to typhus fever (See treatment of typhoid) (Bartholow).

ULCERS AND SORES.

Ulceration is the result of an inflammatory process by which a *sore* or *chasm* is produced. An ulcer is a loss of substance without a tendency to heal. An ulcer is molecular necrosis, the nutrition of the tissue being so disturbed as to allow the chemical or disintegrating changes to have their way. A sore is a chasm, a solution of continuity, caused by ulceration, the result of injury or otherwise, upon an external or internal surface of the body. When a *sore* is being formed or is spreading by the process of ulceration, an *ulcer* is said to exist; when the ulceration has ceased, a *sore* remains (Bryant and Dennis).

Situation.—Ulcers are found upon the skin, mucous membrane, serous membrane, and inner wall of blood-vessels (Dennis).

Varieties According to Condition of Ulcer.—Ulcers may be healthy, inflamed, weak, indolent, sloughing from excess of indolence, or irritable.

Causes.—Are *predisposing* and *exciting*. Predisposing causes are: 1. Age. 2. Malnutrition. 3. Poor blood supply.

The exciting causes are: 1. Injury—mechanical, chemical, and thermic. Mechanical injury, as a splint, pressure, blows, etc. Chemical injury, as the extravasation of urine. Thermic injury, as frost-bite, burns, lightning, etc. 2. Disturbances in the circulation, as varicose veins, atheroma of the vessels, weakened heart action. 3. Disturbances in the nutrition. These may be local or general. Under local disturbances are cedema, congestion, hemorrhage and inflammation. Under general disturbances are syphilis, scurvy, gout, rheumatism and tuberculosis. 4. Disturbance of innervation, associated with diseases of the spinal cord, as bed-sores, etc. We find ulcer in the stump due to innervation.

Causes of ulcers on the leg are due to traumatism, syphilis, or varicose veins. Traumatic and varicose ulcers are situated in the lower third, and syphilitic ulcers are situated in the upper third of the leg, as a rule (Bryant and Dennis).

Description of an Ulcer.—The base may be shallow or deep; the margin may be everted, undermined, or indurated; the discharge may be muco-purulent or bloody.

Treatment.—1. Relieve the congestion. The best way is to take a sharp knife and cut the indurated edge. 2. Encourage healthy granulations by an antiseptic poultice. 3. Elevate the limb and so encourage the circulation. We cannot cure an ulcer without rest. Stimulate granulations by balsam of Peru, aromatic wine, cinchona bark, iodoform, bismuth, or oxide of zinc. Inquire into the constitution of the patient. If he has syphilis, gout or tuberculosis, you must treat these diseases. If the patient suffers from varicose ulcers support the blood-vessels permanently by elastic stockings, if it returns ligate the veins twenty to forty times.

Skin-grafts may be used. Take the skin from the thigh and plant it over the ulcer (Bryant and Dennis).

URÆMIA.

By uræmia is understood the accumulation in the blood of excrementitious substances of the urine.

Causes.—The primary cause is a failure of the kidneys to perform their normal function of elimination, and the consequent accumulation in the circulation of some or all of the poisonous elements of the urine. This condition may occur in the course of any disease in which suppression of the renal secretion takes place; but it is more frequent in acute Bright's disease (Loomis).

Symptoms.—Acute uræmia is usually preceded by certain signs, such as œdema in various parts of the body, restlessness, or an almost irresistible desire to sleep, vertigo, headache, delirium, nausea, vomiting, diarrhœa and impaired vision. The countenance has a pale, waxy or dingy appearance, and the urine is scanty, high-colored, bloody, albuminous, and contains casts. The convulsions may consist of a single paroxysm, and may simulate epilepsy. There is a strong urinous odor emanating from the perspiration. The temperature may be as high as 107° F.

Uræmic coma may come on gradually or suddenly. The patient may be easily aroused. *Uræmic coma* is always accom-

panied by stertor. The stertor is peculiar; it is not the “snoring” of apoplexy, but a sharp, hissing sound. The respirations are at first accelerated but they soon become slow and labored. After a time the temperature falls below the normal standard; the face is pale (Loomis).

Differential Diagnosis.—Uræmia may be mistaken for epilepsy, cerebral apoplexy, hysterical convulsions. *In epilepsy* the temperature is not elevated. The initial cry and corpse-like pallor of the face in epilepsy are wanting in uræmia. *In cerebral apoplexy* coma always precedes convulsions. *In hysterical convulsions* the patient falls with a scream into a convulsive condition and afterwards passes a large quantity of pale urine (Loomis).

Prognosis.—Will depend upon the amount of the poison in the system.

Treatment.—Diaphoresis, by the hot-air baths and by the use of pilocarpin is of service. Digitalis acts efficiently—is diuretic without stimulating the kidneys. It increases the power of the heart’s action. The diminished secretion of urine is due to obstruction in the capillary circulation of the kidneys. Digitalis, by increasing the heart power, overcomes such obstruction. Chloroform is not a good remedy in uræmia. Loomis believes morphine administered hypodermically to be the most efficient remedy for the treatment of uræmia. It arrests muscular spasm. It establishes profuse diaphoresis. It facilitates the action of cathartics and diuretics. Dry and wet cupping over the loins aid in establishing the renal function (Loomis).

URTICARIA.

Called also *hives* and *nettle-rash*, is an ephemeral eruption of the skin, with wheals and itching, from malassimilation, etc.

Causes.—The cause may be neurotic. The vaso-motor nerves are principally at fault. This vaso-motor nerve disturbance may result from direct irritation of the skin, or may be reflex, arising from the irritation of distant organs and tissues. The sting of the common nettle is the most familiar instance of local irritation. It is often called forth, in those who are predisposed, by

scratching the skin, or by the bite or sting of insects, such as the flea, the bug, the mosquito and the wasp. The washing of the face with warm water often brings out hives. The internal causes which may produce nettle-rash by reflex action are: irritation of the uterine nerves; in some persons mental emotion; indigestion, certain kinds of food, such as oysters, crabs and lobsters, nuts, onions, pork, sausages, and medicines, such as valerian, copaiba, cubebs, turpentine and quinine (Anderson).

Symptoms.—The rash is familiar to all. The centre of each wheal is pale, while the periphery is red. The rash comes out with great rapidity, and may disappear in a few hours (Anderson).

Treatment.—Discover and remove the cause or causes. A sharp purge is of use. Atropia and bromide of potassium are sometimes useful. Locally the parts may be sponged with vinegar and water, or with a lotion of carbolic acid (Anderson).

VAGINISMUS.

Called also vulvismus, is a spasmodic contraction of the muscles of the pelvic floor—not of the sphincter vaginæ muscle alone. It is seen alike in single and in married women, and is caused by violence in sexual intercourse, as when, in a newly married couple, there is some difficulty of entering the vagina, and repeated attempts set up an irritation resulting in reflex contraction whenever the penis strikes the anterior margin of the perinæum. It is sometimes seen after child-birth caused by injury to the pelvic floor. It may be caused by local disease of the parts, or it may be due to some disease of the spinal cord. The spasm of the muscles is usually accompanied by pain, often severe, and rendering the accomplishment of the sexual act not only difficult, but impossible (Morris).

Varieties.—*Vaginismus inferior*, where the muscles of the pelvic outlet alone are involved, and *vaginismus superior*, where the levator ani muscle participates in the contraction; the last is a rare affection, and particularly that form where the latter muscle only is at fault. This variety sometimes comes on at the end of the sexual act, and the penis may be grasped by its contraction and retained in the vagina for some time.

Treatment.—Discover and remove the cause. If an irritable hymen is the cause of the trouble, the patient should be etherized and the hymen dissected out. If no inflammation is present gradual dilatation of the vagina does good.

VULVITIS.

Is an inflammation of the vulva. It may be either *catarrhal*, *follicular*, *diabetic* or *aphthous*.

Cause.—*I. Of Catarrhal Vulvitis.*—Want of cleanliness; gonorrhœa, exposure to cold; extension of inflammation from other parts; masturbation.

Symptoms.—Those of an ordinary catarrhal inflammation, viz: swelling, redness, heat, pain and dryness of the parts, followed by increased discharge.

Treatment.—The parts must be kept perfectly clean and warm hip-baths should be freely employed. Dusting with bismuth subnitrate and borated cotton between the labia are of service. If the disease be of specific origin (see vaginitis).

II. Follicular vulvitis is that form in which the sebaceous follicles are involved.

Treatment.—The best treatment consists in warm sedative applications, warm baths, and alkaline washes.

III. Diabetic Vulvitis.—Is dependent upon the presence of a fungus developed from the sugar in the urine, and spreading from the orifice of the urethra to the vulva. The parts become dry and hard and of an intensely red color. The affection is attended with intense and very troublesome itching.

Treatment.—The general condition of the system must be treated as well as the local (Morris).

IV. Aphthous Vulvitis.—Is a disease of childhood following the exanthemata, or any debilitated condition of the system.

Treatment.—Constitutional remedies are as important as local means. Cod-liver oil, quinine, and iron should be given and the most scrupulous local cleanliness insured (Morris).

VARICOSE VEINS.

Are an enlarged and tortuous state of the veins, which are usually thickened, rigid, and formed into irregular pouches.

Situation.—They are most frequently seated on the lower extremities, scrotum and rectum. Varicose veins of the leg are accompanied by pain, weight, and fatigue on taking exercise; they cause ulcers and excoriations of the skin; they sometimes burst, causing profuse hemorrhage, and occasionally blood clots in the veins, which may terminate in an abscess.

Treatment.—The palliative treatment consists in applying strips of leather over the part or a common roller or an elastic stocking, which should be applied in the morning before the patient rises. For the radical cure many methods have been devised (Morris).

VARICOCELE.

Is a varicose state of the veins of the spermatic cord. It is more common on the left side.

Treatment.—Keep the bowels open; wash the scrotum frequently with cold water; support the scrotum with a suspensory bandage. For the radical cure, it is recommended to pass a ligature subcutaneously. Operations on the veins are always attended with some risk. Many surgeons cut down on the veins and ligate them with cat-gut (Morris).

VERTIGO.

Has been well defined as the consciousness of disordered equilibration. It is not properly a substantive disease, but may be the only symptom of the morbid state to which it is referable. It is a subjective state, in which the individual affected, or the objects about him, seem to be in rapid motion, of a rotary, circular, or to-and-fro kind. In common language vertigo is known as dizziness. It may be momentary or of long duration (Bartholow and Loomis).

Causes.—Vertigo is a purely functional affection. It has been divided into *ocular, aural, stomachic, nervous, epileptic, cardiac, cerebral and gouty*.

I. Paralysis of a single muscle may cause *ocular vertigo*.

II. *Aural vertigo* is named after its discoverer—Meniere's disease, and may be caused by disease of the semicircular canals, or other ear troubles.

III. *Gastric vertigo* is the most common, and is an almost invariable attendant on dyspepsia and hepatic disorder.

IV. *Nervous vertigo* is induced by physical or nervous excesses, and Ramskill ranks vertigo from overwork as next to gastric in frequency. It is also caused by excessive use of tea, coffee, tobacco and alcohol.

V. *Epileptic vertigo* precedes an epileptic seizure.

VI. *Cardiac vertigo* is a condition of anæmia of the brain and is closely allied to fainting. The subjects of cardiac vertigo have a swimming sensation in the head, darkness falls on the eyes and they become chilly and weak. It is associated with fatty heart and dilatation of the right cavities.

VII. *Cerebral vertigo* occurs as a symptom in cerebral anæmia and cerebral congestion; in meningitis, in tumor of the brain; in abscess of the brain; in cerebral hemorrhage; in sclerosis of the brain; in chorea, hypochondriasis and chronic alcoholism.

VIII. *Gouty vertigo* is due to the blood changes which characterize the gouty diathesis. The vertigo of the aged is a result of disordered cerebral circulation produced by the senile condition of the heart and vessels. Chronic malarial infection may induce vertigo (Bartholow and Loomis).

Symptoms.—The sensation may be that of objects moving around the patient, or of the patient moving around objects which remain stationary. There is no loss of consciousness. Nausea, vomiting, and ringing in the ears are frequent. The first symptom in ocular vertigo will be the running together of the letters on the page, headache, nausea, and pains in the eyes. In Meniere's disease, tinnitus aurium accompanies the vertigo. After the attack of vertigo passes off deafness remains. Gastric vertigo is accompanied by dyspeptic symptoms, nausea, pyrosis, heartburn, flatulence, diarrhoea, or constipation. The mental state is often deplorable, and true melancholia may ensue

Nervous vertigo is apt to occur after excessive mental effort (Loomis).

Treatment.—Gastric vertigo demands the treatment given under the head of dyspepsia. In ocular vertigo, rest for the eyes and proper glasses will remove it. In aural vertigo, full doses of bromide of potassium are of service. In nervous vertigo, iron, quinine, strychnine, and the removal of the cause are sufficient. The vertigo of old age is benefitted by the bichloride of mercury and tincture of iron, with small doses of Burgundy wine (Loomis.)

VOMITING.

Is not a disease but a symptom in a large number of diseases. As a symptom it often demands treatment.

Treatment.—Tablespoonful doses of *iced champagne* every fifteen minutes will sometimes arrest the vomiting of pregnancy, of sea-sickness, of cholera, yellow fever, etc. A little *chloroform* (Mij.-Mv.) dropped on sugar and swallowed, will remove some kinds of nausea and vomiting.

The *bromides* are serviceable in cerebral vomiting, and in cholera infantum in children, and in some cases of reflex vomiting.

Chloral is highly useful in vomiting of sea-sickness, cholera, and reflex vomiting.

A minim of *wine of ipecac*, given every half hour or hour in a little water, will sometimes relieve the vomiting of pregnancy, vomiting of drunkards, of migraine, etc.

Drop doses of *Fowler's solution*, given before meals, will stop vomiting of irritative dyspepsia, of pregnancy, of chronic gastric catarrh, etc.

Hydrocyanic acid can be prescribed in the vomiting of acute stomach troubles.

Pepsin, *milk and lime-water*, and *bismuth* are proper in the vomiting of indigestion, of stomach inflammation, of acidity and of acute intestinal disorders.

Calomel in very minute doses, every half hour or hour, will stop some kinds of vomiting.

Cerium oxalate, nux vomica and carbolic will in certain cases control vomiting. Counter-irritation at epigastrium often allays vomiting (Ringer and Bartholow).

VARICELLA.

Known in common language as *chicken-pox* or *swine-pox*, is a febrile affection, characterized by the appearance of a vesicular eruption with the first elevation of temperature, the vesicles drying up and falling off in from three to five days. It has been called *spurious variola*. Varicella is the shortest and mildest of the eruptive fevers (Bartholow and Smith).

Causes.—It is due to a specific poison. It is highly contagious, so that few children escape who are exposed to it. It is a disease of childhood. It occurs sporadically and epidemically. It attacks the same individual but once. Inoculation has given negative results. The period of incubation varies from eight to seventeen days (Bartholow, Loomis and Smith).

Symptoms.—Twenty-four hours preceding the eruption there is usually lassitude and a feeling of malaise. The eruption generally appears first on the body then on the head. About the second day vesicles may appear upon the tongue, lips and palate. The vesicles appear in crops. They vary in size from a pin's head to that of a pea, or even larger, and contain a clear watery and sometimes yellowish fluid. The number of vesicles vary from ten to a thousand. The duration of the disease is eight or ten days (Bartholow, Loomis and Smith).

Differential Diagnosis.—Varicella may be mistaken for varioloid. The stage of invasion of varioloid is longer than the stage of varicella. The mildness of the symptoms in varicella is diagnostic. The vesicular character of the eruption from the start is characteristic of varicella. In varioloid the vesicles are preceded by papules. In varioloid the eruption appears first on the face, in varicella it appears first on the body. The umbilicated appearance of the vesicles is wanting in varicella (Flint).

Treatment.—Varicella claims no treatment. Rest in bed, cleanliness, and a non-stimulating diet are important.

VARIOLA.

Is an eruptive disease characterized by the presence of pustules which make their appearance at the end of the third exacerbation of the initial fever, when the temperature declines, but this apyrexia is followed by a secondary fever, or fever of maturation. It is known in common language as *small-pox* (Bartholow).

Morbid Anatomy.—The characteristic lesion of small-pox is the eruption. The successive stages of the eruption are the *macule*, the *papule*, the *vesicle* and the *pustule*. The pustule undergoes desiccation. The macule is a reddish, slightly-elevated spot due to congestion of a circumscribed portion of the skin. A characteristic appearance of the small-pox vesicle is produced by a central depression in its roof, the so-called umbilication of the vesicle (Flint).

Causes.—Small-pox is spread by a peculiar virus whose nature is unknown. In the open air the distance of contagion is about two and one-half feet. Rarely does an individual have a second attack. The period of incubation varies from five to thirty days, average fourteen days. The negro and Indian races are particularly susceptible to the disease (Bartholow, Flint and Loomis).

Symptoms.—*Stage of Invasion.*—The disease is ushered in by a chill in the great majority of cases, and the chill is usually more marked than in the other eruptive fevers. Fever follows the chill. It is known as the *primary fever*. It is often intense, 104° or 105° F. There are nausea, vomiting, coated tongue, pain in the stomach, also in the limbs and loins, headache and delirium. The duration of this stage, as a rule, is two days. The eruption begins to appear on the third or fourth day.

Stage of Eruption.—The eruption, as a rule, appears first on the face, about the lips and chin, then on the neck and wrists; next on the chest and arms; then over the body. At first the eruption appears in the form of small red spots or specks. It is now a maculated eruption. The central part of the maculæ becomes hard, elevated and pointed. It is now a papular eruption. The papulæ feel like small shot under the skin. Next a

clear liquid becomes visible in the papulæ, which now become *vesiculæ*. On the fifth day of the stage of the eruption the vesicles are one-quarter to one-third of an inch in diameter. More or less of the vesicles present a depression in the centre. They are said to be umbilicated. This appearance is highly characteristic, indeed, almost pathognomonic. After this the vesicles become pustules. In other words suppuration takes place. On the appearance of the eruption the primary fever falls almost to the normal. This is a highly diagnostic feature of small-pox.

Stage of Suppuration.—Usually on the sixth day after the first appearance of the eruption, there is a recurrence of the fever called *suppurative* or *secondary fever*. The face, hands and feet swell. The duration of this stage is four or five days.

Stage of Desiccation.—This stage begins on about the twelfth day of the disease. The pus collects into a thick scab. During this stage the skin exhales a sickening characteristic odor. The whole duration of small-pox is between seventeen and twenty-four days (Flint and Loomis).

Prognosis.—Varies—from ten to twenty-five per cent. die.

Treatment.—There is no special plan of treatment. The disease will run its course and hence the expectant plan is to be pursued (Flint).

VARIOLOID.

Is modified small-pox. Small-pox is modified as a rule when produced by inoculation. Inoculation had been practiced from time immemorial in China and Persia. The eruption in cases of inoculated small-pox is usually slight. The pocks rarely exceed one hundred. Many of them abort.

As a rule, variolation or inoculation affords complete protection ever thereafter against small-pox. It was a great blessing prior to the discovery of *vaccination*. At the present day in most cases of varioloid the modification is due to vaccination.

Vaccination does not always afford complete protection against small-pox, but in general the disease is materially modified.

The treatment of varioloid is the same as ordinary small-pox (Flint).

VACCINIA, OR COWPOX.

Vaccinia and cowpox are names of a disease of the cow which, communicated to man, destroys in the great majority of cases for a certain period the susceptibility to small-pox. Cowpox is transferred to man by the introduction of a virus. The operation for its communication is called vaccination. For the employment of vaccination as a means of preventing small-pox the world is indebted to the immortal Jenner, who published his discovery in 1798. The history of vaccinia in man is as follows: On the third day after vaccination red points or small papules are apparent where the vaccine virus was inserted. On the fourth day the papules are more developed. On the fifth day vesicles appear, and on the eighth day they are fully developed. On the ninth or tenth day the contents of the vesicles become purulent, or pustules are formed. The pustules desiccate and fall off about the twenty-fifth day from the date of vaccination. Cowpox is not identical with small-pox, although allied to it. In a large majority of cases vaccination affords, for a time at least, absolute protection against small-pox. In a minority of cases the susceptibility to small-pox is not destroyed, but the disease is materially modified, constituting what is called varioloid. Revaccinating every five years is to be advocated. The *bovine virus* should be used. The dangers following some cases of vaccination are abscesses, erysipelas, and blood-poisoning (Flint).

VALVULAR DISEASES.

Include those alterations in the structure of the valves themselves or of the orifices which render the former incapable of performing their office in the closure of the latter. The lesions may be of two kinds—*obstructive* or *regurgitant*; that is, the orifice may be so narrowed as to obstruct the passage of the blood, or the valves may be so damaged as to permit the blood to regurgitate. The narrowing of an orifice is termed *stenosis*; the incompetence of a valve to close the orifice is termed *insufficiency*. There are four points at which these lesions may occur, viz: mitral, aortic, tricuspid, and pulmonic orifices (Bartholow).

Cardiac Murmurs.—A cardiac murmur is an abnormal sound produced within the heart or blood-vessels, either by obstruction to the blood-current, an abnormal direction of the blood-current, or a change in the blood constituents. Should any obstruction exist at either of the auriculo-ventricular orifices, the blood while passing through the opening at the end of a cardiac diastole, will impinge on such obstruction and cause a *presystolic* murmur.

During a cardiac systole, if the semilunar valves obstruct the outgoing current, or if the mitral or tricuspid valves do not wholly close the auriculo-ventricular orifices, then, in the one case, the blood-current as it passes over the obstruction at the semi-lunar orifices, will produce a *systolic* murmur, and in the other a systolic murmur will be produced by the backward current through the abnormal opening at the auriculo-ventricular orifices. If the pulmonary and aortic system have back of them a semilunar valve that does not completely close that end of the circuit, the blood will regurgitate into the ventricles during the period of cardiac rest, so that semilunar incompetence causes a *diastolic* murmur.

The following is the order of relative frequency of cardiac murmurs: (1) Mitral regurgitation; (2) aortic obstruction; (3) aortic regurgitation; (4) mitral obstruction; (5) tricuspid regurgitation; (6) tricuspid obstruction; (7) pulmonary obstruction; (8) pulmonary regurgitation.

Of the eight cardiac murmurs, four are *systolic*, two *diastolic* and two *presystolic*.

After determining whether the cardiac murmur be systolic, diastolic or presystolic, we next find the point of its *maximum intensity*. Murmurs arising at the *mitral* valve are loudest at the apex of the heart, or just above it; *tricuspid* murmurs are loudest over the lower part of the sternum; pulmonary murmurs, in the second left intercostal space close to the sternum, and aortic murmurs in the second right intercostal space at the edge of the sternum (Loomis).

Rational Signs and Symptoms of Valvular Defects.—When stenosis exists at an orifice, the amount of blood passing through is necessarily lessened, with the effect to cause ischemia and lowered tension in front, and stasis and abnormally high tension

behind. The same result follows if the contractions are feeble and the cavity dilated. Lesions of the aortic orifice, either obstructive or regurgitant, lead to dilatation of the left ventricle, to diminished blood-supply, and lowered tension in the vessels of the aortic system; and to increased pressure and distention in the left auricle and pulmonary veins. Mitral lesions, either obstructive or regurgitant, cause abnormal fullness and distention of the left auricle and pulmonary system, and ischæmia and lowered tension in the left ventricle and aortic system. Lesions of the tricuspid orifice induce dilatation of the right auricle and increased pressure in the venæ cavæ, and ischæmia and lowered pressure in the right ventricle and pulmonary artery.

Lesions of the pulmonary orifice bring about dilatation of the right ventricle and elevated tension in the right auricle and venæ cavæ, and ischæmia and lowered tension in the pulmonary artery. All valvular lesions bring about, sooner or later, a state of the circulatory organs in which there are ischæmia and lowered tension in the aortic system and stasis and high tension in the venous system.

When *compensation* takes place this is not the case. Stenosis of an outlet is compensated by dilatation of the cavity and hypertrophy of the walls. But the compensation may be easily overcome, and symptoms of valvular disease ensue. The most usual pulmonary disturbance induced by valvular disease is stasis of the blood, which leads to catarrh of the bronchi, and is accompanied by cough, mucous expectoration, mucous and sub-mucous rales, etc. There is difficulty of breathing. There may be cyanosis with pain in the chest, shoulder, and down the arm. The condition of over-fullness of the venous is seen in the distended state of the superficial veins (Bartholow).

AORTIC OBSTRUCTION, OR STENOSIS.

This is a common cardiac lesion, and is always accompanied by more or less hypertrophy of the left ventricle (Loomis).

Causes.—Aortic stenosis is most frequently met in middle and advanced life; the mean age being forty-seven years. Interstitial endocarditis of rheumatic origin is its most frequent cause.

Chorea and chronic Bright's disease may cause it. Atheroma or arteritis deformans extending to the valves sometimes gives rise to it. Men suffer from aortic stenosis oftener than women. Occupations that involve repeated, sudden and sever muscular effort induce it (Loomis).

Symptoms. The subjective symptoms of aortic stenosis are rarely well marked. When the compensation is overcome, then the pulmonary vessels and the venous system are abnormally full. The scanty arterial supply causes pallor of the face, and syncope may occur from cerebral anemia, but these are late symptoms. The pulse is normal in frequency, diminished in volume and fullness, and as a rule regular. Signs of arterial anemia usually precede those of venous engorgement. There may be slight palpitation and paroxysmal pain in the chest. Aortic stenosis is more often associated with cerebral embolism than any other valular lesion. The left middle cerebral artery is the most common seat of cardiac emboli (Loomis).

Physical Signs.—*Inspection* shows the area of cardiac impulse to be abnormally increased.

Palpation.—The impulse is felt to be forcible, and may be accompanied by a heaving or lifting sensation. The apex is displaced to the left and slightly downward.

Percussion.—The area of cardiac dullness increases.

Auscultation.—Aortic obstructive murmurs are loudest and most distinct at the second right intercostal space and at the sternal insertion of the third left costal cartilage. They are systolic and accompany the first sound of the heart. These murmurs are always harsh, and heard most distinctly at the commencement of the systole. The area of diffusion of this murmur follows the law that a murmur is propagated in the direction of the blood-current. It is conveyed along the aorta into the carotids and one of its characteristics is that it is heard in the great vessels of the neck. It may be heard in the abdominal and thoracic aorta (Loomis).

Differential Diagnosis. Aortic obstruction may be mistaken for *mitral* and *tricuspid regurgitation*, an *anemic bruit*, or the *murmur of a thoracic aneurism*. Both mitral and tricuspid regurgitation and aortic stenosis produce a systolic murmur. The

murmur of aortic stenosis is heard with its maximum intensity at the third left sterno-costal articulation, and diminishes in intensity toward the apex of the heart. The murmur of *mitral regurgitation* is heard loudest at the apex-beat. The murmur of aortic stenosis is conveyed into the vessels of the neck; that of mitral regurgitation to the left, in the direction of the apex-beat, and is heard behind, between the fifth and eighth dorsal vertebræ, at the left of the spine, with very nearly the same intensity as at the apex. The *pulse* in aortic stenosis is normal in frequency, diminished in volume and fulness, and, as a rule, regular in rhythm; while in mitral regurgitation it is irregular in rhythm and force, and is easily increased in frequency. Gastric, intestinal, renal, hepatic, and bronchial symptoms are present in mitral regurgitation, while the subjective symptoms of aortic obstruction are cerebral in character. The murmur of aortic stenosis is *harsh*, that of mitral regurgitation *soft*, and often musical.

Tricuspid regurgitation is accompanied by a systolic murmur which is rarely heard *above* the third rib; while that of aortic stenosis has its point of maximum intensity at the second right intercostal space and at the sternal insertion of the third left costal cartilage. Tricuspid regurgitation is accompanied by *jugular pulsation*; while the murmur of aortic obstruction is heard in the arteries of the neck. The *pulse* in tricuspid disease is normal; in aortic stenosis it is diminished in volume and fulness and is sometimes hard and wiry.

Anæmia produces a murmur heard loudest in the carotids and accompanied by a venous hum. In anæmia there are three murmurs: cardiac, venous, and arterial. The murmur is soft and blowing in anæmia, and harsh in aortic obstruction.

In *thoracic aneurism* the dilating impulse on palpation, the normal force of the heart-beat, the single and double bruit, and the pain are all important signs, which are absent in aortic stenosis (Loomis).

AORTIC INSUFFICIENCY, OR REGURGITATION.

This is an abnormal condition of the aortic valves, which prevents their complete closure, and allows a backward current of blood to flow from the aorta into the left ventricle during its diastole (Loomis).

Causes.—Rheumatic endocarditis is the chief cause; but it may follow sudden and violent muscular effort, atheroma of the aorta, or endarteritis. Dilatation of the aorta at its origin may induce it. Alcoholismus and gout predispose to it. Fagge says only fifty per cent. of the cases give a rheumatic history (Loomis).

Symptoms.—So long as hypertrophy compensates for the regurgitation, there is little or no inconvenience experienced by the patient. In time the hypertrophy induces excessive heart-action during excitement or violent muscular effort. The heart-action then becomes labored, and the patient is anxious, nervous and fretful, and knows well that exercise will increase his uncomfortable symptoms. The respirations are accelerated with the cardiac palpitation; as the disease advances, attacks of headache and vertigo become more and more prolonged and severe; the patient complains of *muscæ volitantes*, dyspncea, and giddiness, and is compelled to sleep with his head elevated. Palpitation and a visible carotid impulse are now constantly present. A frequent symptom is a distinctly paroxysmal shooting or stabbing pain over the heart, in the left shoulder, or extending down the left arm. The pain may pass from the middle of the sternum down the right arm. The pain may be accompanied by numbness. When mitral insufficiency exists with the aortic, the systemic veins become overloaded and cyanosis and dropsy result; the dropsy appears first as œdema of the feet, and gradually extends upward until there is general anasarca.

Later in the disease, there is orthopncea, sudden startings in sleep, angina pectoris, and there may be albuminuria and enlargement and tenderness of the liver. Attacks of syncope occur. These patients may die at any moment. The pulse is visible in the vessels of the head, neck and upper extremities. It is often called the "*piston pulse*," "*Corrigan's pulse*," "*water-hammer*,"

"jerking," "splashing," or "collapsing" pulse. It is large and distinct. When the arm is raised above the head, its characteristics are more apparent. The radial impulse is felt a little after the apex-beat (Loomis).

Physical Signs.—*Inspection* shows an increase in the area and force of the apex-beat. When compensation ceases to balance the forces in the heart, the apex-beat becomes feeble and diffused.

Palpation gives a heaving, lifting impulse which is transmitted over a large area. The apex-beat is displaced down and toward the left, sometimes as far as the eighth rib, and two and one-half inches to the left of the left nipple.

Percussion gives increased area of dullness.

Auscultation.—Aortic regurgitation is attended by a diastolic murmur, which may take the place of, or immediately follow, the second sound of the heart. This murmur has its maximum intensity at the sternal end of the second right intercostal space, or at the sternal junction of the third rib on the left side. Its area of diffusion is greater than any other cardiac murmur. It may be heard in the carotids and at the sides of the chest. It is a soft, blowing murmur, sometimes rough and frequently musical (Loomis).

Differential Diagnosis.—Aortic regurgitation may be mistaken for *aortic stenosis*, *mitral obstruction*, *aneurism of the aorta*, and *pulmonic insufficiency*. *Aortic stenosis* gives a systolic murmur, while aortic regurgitation produces a diastolic murmur. *Mitral obstruction* gives a presystolic murmur, while aortic reflux a diastolic murmur. Mitral stenosis is accompanied by *no hypertrophy or dilatation of the left ventricle*; whereas, these conditions are *always* present in aortic reflux. The murmur of mitral stenosis is the longest of all cardiac murmurs, and is never heard behind; whereas, that of aortic regurgitation is heard at the sides of the chest and along the spinal column. In aneurism there is absence of left ventricular dilatation and hypertrophy, and presence of a peculiar jerking pulse. *Pulmonic insufficiency* is the rarest of all valvular lesions.

MITRAL OBSTRUCTION, OR STENOSIS.

Stenosis of the mitral orifice probably never occurs without some insufficiency.

Causes.—Mitral stenosis is most frequent in the young; it rarely occurs after fifty. It is twice as frequent in females as in males. It is frequently of congenital origin. Acute rheumatic endocarditis is its most frequent cause (Loomis).

Symptoms.—The subjective symptoms of mitral stenosis are few. Usually after violent exercise there is more or less cardiac palpitation, and this will cease as soon as the auricle can empty itself, which is accomplished by the patient assuming a recumbent position on the right side, with the head slightly elevated. This class of patients are usually pale and anæmic, and frequently experience a sharp pain in the region of the apex-beat. The pulse is regular and normal in character, so long as the auricular hypertrophy compensates for the auricular dilatation. The passive pulmonary hyperæmia which attends the advanced stages of this form of cardiac disease causes habitual dyspnoea, which is exaggerated by physical exertion and by a dry, hacking, “teasing” cough, which resembles the so-called nervous cough. After severe exercise, a pint of glairy, watery mucus may be expectorated. The mucus may be blood-stained, indicative of pulmonary congestion and œdema. Hæmoptysis is not infrequent, and small quantities of pure, florid blood may be expectorated. Orthopnoea is a rare symptom (Loomis).

Physical Signs.—*Inspection.*—As the left ventricle does not receive its normal quantity of blood, the cardiac impulse is feeble.

Palpation.—On palpation, the apex-beat is less forcible than normal, and a distinct *purring thrill* will be communicated to the hand. This thrill is a constant attendant of mitral stenosis.

Percussion.—The increased size of the left auricle may cause an increase in the area of cardiac dulness, upward and to the left, at the second left intercostal space.

Auscultation.—Mitral stenosis is characterized by a loud “churning,” “grinding,” or “blubbery” presystolic murmur.

This murmur is of longer duration than any other cardiac murmur. The murmur is heard with its maximum intensity a little above the apex-beat. It is louder when the patient is erect than when in a recumbent posture. When mitral reflux and mitral obstruction coexist, the two murmurs run into each other, constituting a single murmur. A mitral obstructive murmur is never soft or musical (Loomis).

Differential Diagnosis.—The diagnosis of mitral stenosis depends upon the existence of two physical signs, the “purring thrill” and a loud, long, blubbery presystolic murmur.

MITRAL INSUFFICIENCY, OR REGURGITATION.

Regurgitation at the mitral orifice is due to a condition of the mitral valves which allows the blood to flow back from the left ventricle into the left auricle (Loomis).

Causes.—Mitral regurgitation may occur at any age; but it is especially liable in the young to follow rheumatic endocarditis, which causes extensive thickening, induration and shortening of the mitral valves. It may be secondary to aortic lesions. Excessive dilatation of the left ventricle may cause it. Diseases of the columnæ carneæ and chordæ tendineæ will also cause mitral insufficiency. Ulcerative endocarditis may also cause it, either by perforation and rupture of the valves, or by rupture of the chordæ tendineæ (Loomis).

Symptoms.—During the early stage, when the hypertrophy of the right ventricle compensates for the regurgitation, there are no rational symptoms; but when the right ventricle is unable to overcome the obstruction to the pulmonary circulation caused by regurgitant blood current, there will be more or less dyspnoea, and a short, hacking cough with an abundant expectoration of frothy serum. Sometimes the serum is blood-stained. In advanced cases, the extremities, face and lips become blue, the result of the interference with the capillary return circulation. The liver becomes enlarged and hardened. There will be anorexia, nausea and a sense of oppression in the epigastrium. Sometimes the hepatic circulation becomes so obstructed as to interfere with bile secretion, and thus give the skin a greenish

tint. There are frequent attacks of gastric and intestinal catarrh. Headache, dizziness, vertigo and stupor result from the passive cerebral hyperæmia. The urine is diminished in quantity, high-colored, and loaded with lithates; it sometimes contains albumen. There may be free hæmoptysis. Another late symptom of mitral regurgitation is *dropsy*; it first appears in the lower extremities, and gradually extends over the whole body. The *pulse* of mitral regurgitation is, at first, regular in force and rhythm; later it becomes diminished in volume, irregular and diminished in force (Loomis and Bartholow).

Physical Signs.—*Inspection.*—The area of the visible cardiac impulse is increased. The epigastric pulsation is due to right ventricular hypertrophy, which is a condition always found with extensive mitral regurgitation. The jugular veins appear swollen, especially when the patient is lying down. *Palpation.*—The apex-beat is displaced to the left and is felt *lower* than normal. Palpation sometimes reveals a *systolic thrill*, which is confined to the region of the second left intercostal space near the sternum. *Percussion.*—The area of dullness is increased. *Auscultation.*—Mitral insufficiency is attended by a systolic murmur. It is usually soft and blowing, but may be musical. This murmur takes the place of the first sound of the heart, and is heard with its maximum intensity at the apex-beat. A loud systolic murmur at the *apex*, and *not* heard at the back, is not indicative of mitral reflux (Loomis).

Differential Diagnosis.—Mitral regurgitation may be mistaken for *aortic obstruction* and *tricuspid regurgitation*. The diagnosis between mitral reflux and aortic stenosis has already been considered. Both mitral and tricuspid insufficiency produce a systolic murmur; a mitral regurgitant murmur has its maximum intensity at the apex, while the maximum intensity of a tricuspid regurgitant murmur is to the left of the base of the ensiform cartilage. Pulmonary symptoms are prominent in mitral reflux and absent in tricuspid regurgitation (Loomis).

TRICUSPID OBSTRUCTION, OR STENOSIS.

This lesion is so rare that there are no rules for its diagnosis. But its symptoms would be general cyanosis, swollen jugulars, dilated right auricle, headache, dizziness, vertigo, etc.

TRICUSPID INSUFFICIENCY, OR REGURGITATION.

This lesion is usually secondary to mitral disease.

Causes.—The most frequent cause of tricuspid regurgitation is mitral stenosis and regurgitation; next chronic bronchitis, and pulmonary emphysema (Loomis).

Symptoms.—There may be cardiac palpitation, dyspnoea, irregular heart action, enlarged liver, dingy skin, obstinate constipation and hemorrhoids. Venous stasis in the stomach is evinced by dyspepsia, nausea, vomiting and hæmatemesis. Passive cerebral hyperæmia is marked by headache, dizziness, vertigo, and muscæ volitantes. Placing the patient in a horizontal position, after the disease has existed for some time, causes the face to become turgid and blue. Jugular and epigastric pulsation are its characteristic physical signs. A very late symptom is dropsy (Loomis).

Physical Signs.—*Inspection.*—In extensive tricuspid disease, the area of cardiac impulse is increased more than in any other valvular lesion. This area sometimes extends from the nipple to the ensiform cartilage. There is a visible impulse in the jugulars.

Palpation.—The apex-beat is indistinct. Pulsation occurs in the epigastrium.

Percussion.—Shows an increase in the area of cardiac dullness.

Auscultation.—The murmur is soft, faint and blowing, and is heard with greatest intensity over the lower part of the sternum. It is heard with the first sound of the heart (Loomis).

Pulmonic Obstruction and Regurgitation are so rare, clinically, that they may be disregarded (Loomis). *Prognosis in valvular disease.*—The prognosis varies. In *aortic stenosis* life may be prolonged many years. *Aortic regurgitation* is a graver form of disease than aortic stenosis. *Mitral stenosis* admits of

no compensation. It is usually grave. *Mitral regurgitation* is not serious if compensated (Loomis).

Treatment of Valvular Diseases.—The treatment can be summed up in *rest, diet and regimen*. Rest must be mental as well as physical. Straining is to be avoided. The appetite, emotions and passions must be under perfect control, hence a sedentary country life is best. The bowels should be daily gently moved. The body must be warmly clothed. Prolonged exposure to cold is to be avoided. Warm baths are beneficial. When the heart power is feeble, tincture of digitalis and tincture of perchloride of iron are to be given in ten-drop doses, three times a day. In some cases arsenic acts well. The use of alcohol, strong tea or coffee, or tobacco, is to be prohibited. small doses of quinine and strychnine are useful. The dropsy may be relieved by *pulex jalapa comp.*, combined with calomel, squills, juniper, broom and cream of tartar, act as diuretics. For the præcordial pain, a belladonna plaster and morphine will give relief. Strophanthus will be found valuable in some cases. Nitro-glycerine may be employed to lower arterial tension, and thus relieve a laboring heart. Caffeine and spartein sometimes give relief (Loomis).

WARTS.

Are outgrowths of the papillæ of the skin. They are common on the hands and other parts of the body of the young, and more rare in the adult. When on the exposed parts of the body, they assume a horny hardness. Warts are *flat* or *pedunculated*. They occur on the neck, orifice of the nose, mouth, eyes, ears, and anus, also on the prepuce and labia. The flat warts occasionally come and go in a way which cannot be accounted for. An epithelial cancer may appear in a wart. *Venereal warts*, so-called, are very abundant, whether they grow from the glans penis or prepuce of the male or labia of the female. They are pedunculated, moist, and highly vascular, and are clearly contagious. Warts, however, may occur at times in these parts without any venereal contact (Bryant).

Treatment.—Pare away the cuticle and then touch the surface with a glass rod moistened with strong acetic acid, carbolic

acid, acid nitrate of mercury, or potassa fusa, care being taken to protect the skin around the wart. Pedunculated dry warts should be cut off with the knife or scissors. The application of some powder as oxide of zinc, or even starch may cause them to dry up, and disappear (Bryant).

YELLOW FEVER.

Is an endemic miasmatic contagious disease, which usually appears as an epidemic. It prevails most in tropical regions, occurring only south of 48° north latitude, and is characterized by a yellowish discoloration of the skin. It has been called *black-vomit* (Loomis).

Morbid Anatomy.—The liver is usually slightly enlarged. Its color is yellow, like butter, cheese, mustard, or chamois. The blood is of a darker color than normal, and coagulates slowly. The mucous membrane of the stomach and intestines is the seat of hemorrhagic erosion, which causes the *black-vomit*. Changes take place in the heart, lungs, kidneys, etc. (Loomis and Flint).

Causes.—Nothing is as yet known of the nature, form and composition of the morbid principle, or specific microbe of yellow fever. It is indigenous in warm climates. Yellow fever is rarely developed south of 20° south or north of 40° north latitude. The miasm is more active at night than in the day-time. The natives of yellow-fever localities are rarely attacked. The disease is rarely experienced a second time in the same individual. The negro race seems to be singularly exempt from a liability to this disease. All ages suffer. The special cause is destroyed by cold. It is a matter of common observation that an epidemic is arrested by one or two hard frosts. Commercial seaports are pre-eminently the starting-points of great epidemics. Crowding is one of the essentials to its development. The period of incubation varies in duration from twelve hours to fifteen days (Flint and Loomis).

Symptoms.—An attack of yellow fever usually is abrupt. It is denoted generally by a chill, with or without rigor. Fever follows, varying between 102° and 110° F. The pulse seldom

exceeds 100. The tongue is coated. Vomiting may occur early but is usually a later symptom. The bowels as a rule, are constipated. Cephalalgia is sometimes intense. Pain in the loins and calves of the legs is sometimes a prominent symptom. The eyes are reddened, irritable, watery, or tearful. The fever continues for a period varying between a few hours and three days. Then follows either a marked abatement or entire cessation of fever. The condition following the febrile paroxysm has been called "the state of calm." This is called the second stage of the disease. In a large proportion of fatal cases and in a few of the cases ending in recovery the *black vomit* occurs. This, taken in connection with other symptoms, is pathognomonic of the disease. The *black vomit* rarely occurs until after the febrile paroxysm, and usually ceases twelve to twenty-four hours before death. During the second stage the evacuations from the bowels resemble sometimes tar or molasses. Yellowness of the surface of the body occurs after the febrile paroxysm. Hemorrhage from the stomach, intestines, kidneys, bladder, nostrils, gums, uterus, etc., is often a striking feature. Patients sometimes do not take to the bed, but keep about their usual avocations, not thinking themselves much ill, often a few hours before death. The face is flushed, the eyes injected, brilliant, transparent, fiery and glassy. The countenance is that of suffering, dejection, anxiety, anguish, despair, terror, stupidity, vacancy, astonishment, etc. The duration of the disease after the febrile paroxysm varies between twelve hours and three or four days. The third stage is called the stage of collapse or exhaustion in fatal cases. If death do not take place, the third stage is the stage of convalescence. The duration of the disease varies between three and nine days. The average duration is less than a week (Flint and Loomis).

Treatment.—There is no specific remedy for yellow fever. Patients should take to the bed at once. Free ventilation, cleanliness and cold sponging are useful. Mercury has been tried. Ice may be swallowed. The acetate of lead with opium has been much extolled to prevent black vomit. Milk with lime-water is probably the best article of diet. Great restlessness calls for opium. Alcoholic stimulants may be given (Flint and Loomis).

CHAPTER III.

MEDICAL DISEASES OF WOMEN.

BY W. J. GILLETTE, M. D.

AMENORRHŒA.

The term amenorrhœa signifies either an entire absence, a less than normal amount, or an habitual delay of the return of the menstrual discharge. To those cases in which menstruation has never become established, the term primary amenorrhœa is applied, and secondary amenorrhœa to those in which menstruation has been once established but has either completely or in great measure disappeared.

For the proper establishment of menstruation it is necessary that the sexual organs be properly developed and that there be sufficient nutrition and vigor of the general system to sustain it. The primary form of amenorrhœa is usually due to a lack of development of the uterus and ovaries which remain in an infantile condition. It is also possible that there may be an entire absence of the ovaries and uterus. The causes that operate to produce secondary amenorrhœa will also act to produce the primary form. Secondary amenorrhœa is occasioned by any constitutional derangement of the system which tends to greatly lower the vitality, as chlorosis, Bright's disease, malaria, diabetes, cancer, tuberculosis, and any of the acute fevers as well as syphilis. The influence of the nervous system is also a great factor in the production of secondary amenorrhœa, how else can we account for the frequently observed temporary suppressions of menstruation, as a result of fright, in the insane, in prisoners, in women taking sea voyages and often in the unmarried who live irregular

lives and have subjected themselves to the danger of pregnancy. Obesity and plethora are often observed coincidentally with amenorrhœa possibly, standing in a causative relation. In the consideration of any case of secondary amenorrhœa, the possibility of pregnancy being the cause of the suppression should never be lost sight of. Any of the inflammatory diseases of the uterus and adnexa, either chronic or acute, together with superinvolution or long standing subinvolution, mutilations of the uterus and ovaries and even the too vigorous use of the curette and the cautery have been followed by amenorrhœa. Menstruation always disappears after the complete removal of the uterus and in a large majority of cases after the ovaries and tubes have been removed; occasionally, however, it happens that menstruation continues after complete removal of the ovaries, usually ceasing after a year or two.

Tumors of the ovary do not usually interfere with menstruation, at least not until a very late date, or unless both ovaries are involved, and finally become destroyed completely by the growths, when menstruation may cease. An imperforate hymen, cervix or vagina may prevent the appearance of the menstrual flow, but these cases can easily be diagnosed from amenorrhœa due to lack of development of the uterus and ovaries, by the fact that the patient has the usual monthly recurring symptoms of menstruation, pain, discomfort, etc., and on examination a well marked bulging may be discovered at the vulva and sometimes a tumor extending above the pubis. Most of these cases are due to imperforate hymen and are easily cured by incising the hymen under antiseptic precautions and allowing the retained menstrual blood to escape, after which the regular monthly period becomes established. The sudden discharge of a retained menstruation is not entirely free from danger, and it is best to allow it to come away slowly, afterwards washing with an antiseptic fluid, as a solution of bichloride of mercury (1 to 5000).

The diagnosis as to whether a case of primary amenorrhœa is congenital or not, is of importance. If it be congenital, an examination reveals the absence or abnormality of the internal sexual organs. Externally the genitals may be normally formed,

the pubes covered with hair and the mammæ well developed. This class of cases may develop masculine characteristics, the upper lip covered with hair, and the muscular and mental characteristics more nearly approaching the male than the female; but often there is nothing in the general appearance to indicate anything sexually wrong. In the second class of cases the pubes remain bare, the mammæ undeveloped and there seems to be a complete absence of sexual development, with always a general appearance of masculinity. These do not develop symptoms of any kind indicating the trouble. Nothing can be done to relieve the condition when distinctly congenital. Cases not congenital but of delayed development may, if treated while the patient is yet young, be benefited by removing the cause of the delay, which will usually be found to be general debility with improper mode of living. Remedies directed to bettering the constitutional conditions, with sometimes local stimulation of the uterus by the use of electricity, the dilating from time to time of the cervix, etc., will be found of value. Internal remedies, such as the bitter tonics, gentian, columbo, etc., with iron, nux vomica and cod-liver oil, are very useful.

Secondary amenorrhœa may be occasioned by a variety of pathological conditions, as indicated above, and the treatment of it will vary, according to the cause. When due to any of the debilitating diseases, these diseases should be treated, and little attention paid to the menstruation. As soon as health is re-established, menstruation, as a rule, will recur. The amenorrhœa of chlorosis is best treated by giving iron and arsenic with saline purgatives, or by giving arsenic for a time, followed by iron and aloes pills. I have found Blaud's pill a most useful one in these cases. Manganese has been recommended, but its value is questionable, and if it is of value, it is certainly not the equal of iron. Potassium permanganate, tansy, savine or saffron have been recommended, but they are not entirely free from danger, and should seldom, if ever, be given.

The prognosis is serious or not, depending entirely on the pathological condition causing the amenorrhœa. In young girls it is usually more favorable than in women who have borne children.

Sudden suppression of the flow during a monthly period is most frequently caused by a disturbance of the circulation, by exposure to cold, by excessive exertion, or by great mental emotion, and this sudden stoppage may be followed by inflammation of the ovaries, uterus and tubes, if the flow is not promptly re-established. The treatment at first should be directed to the re-establishment of the circulation through its proper channels. Warm sitz-baths and hot drinks should be given, the patient placed in bed, with hot fomentations over the abdomen. A cathartic may be given with advantage. If the menstruation fails to be re-established, as soon as the period has passed means should be adopted for the relief of the uterine congestion, as hot douches, warm sitz-baths, the application of leeches to the cervix, or scarifying. Exercise should be restricted.

DYSMENORRHOEA.

Dysmenorrhœa, or painful menstruation, is due to pathological conditions which may be grouped roughly under four heads:

1. *Defective nerve supply, or the neuralgic.*
2. *Inflammatory.*
3. *Mechanical obstruction to the flow.*
4. *The membranous variety*, in which the mucous membrane of the uterus, instead of undergoing fatty degeneration, is cast off entire or in shreds.

The *neuralgic variety* seems to be due entirely to a general neurasthenic condition, the uterus and adnexa presenting no discoverable pathological lesions that could account for the severe pain. This class of patients is usually hysterical and suffer from nervous troubles. The digestion is bad and they are usually anæmic. Hyperæsthesia over the lower abdomen will usually be observed even during the inter-menstrual period.

The diagnosis must be based upon the fact that no lesion of the uterus can be found and upon the general condition of neurasthenia. Often this trouble is associated with rheumatism. Prognosis is not very favorable but in time with careful treatment the trouble may disappear. The indications for treatment

are general rather than local. If the patient suffer from rheumatism, tincture of guaiac, colchicum, or salicylate of sodium will be found of benefit. Tonics, out-door exercise, and a good nourishing diet with cod-liver oil, will aid greatly. In the purely anæmic and neurasthenic cases, very often the continued use of chlorate of potash, iron, and the bitter tonics will be found of value. For the actual suffering some of the coal tar derivatives, as antipyrin and phenacetin, or pulsatilla given every hour will greatly relieve. Opium and alcohol, although they promptly relieve, should not be given for the habit of their continued use may be acquired.

Inflammatory dysmenorrhœa is a result of inflammation of the uterus and adnexa. Whenever the uterus becomes inflamed it is seldom that this inflammation does not extend to the ovaries and tubes, sometimes producing chronic pelvic peritonitis with accumulations of pus. Whenever the inflammation is largely limited to the uterus the pain begins with the flow, and continues while it lasts; but if the inflammation has attacked the tubes and ovaries the pain will begin three or four or more days before the flow starts and is usually then in a large measure relieved. The pain of menstruation due to inflamed ovaries and tubes is usually most marked on the left side, radiating down the thigh and much increased when the patient walks about. These cases have usually a history of sterility and though much may be done for them in the way of palliative treatment, yet a complete cure aside from the removal of the ovaries and tubes, is usually not to be looked for. Headache, nervousness, and some fever usually accompany the pain, and the patient is sometimes much nauseated.

The diagnosis will be indicated by the character of the pain and the evidences of inflammation within the pelvis.

The treatment will be that indicated for inflammation of the pelvic organs. The bowels should be kept open with salines and the patient kept in bed during the menstrual period. Hot fomentations may be applied to the lower part of the abdomen. To control the pain, some one of the coal-tar derivatives may be given, as antipyrin, phenacetin, etc. Opium and alcohol should be withheld. During the intermenstrual period, treatment for

the pelvic inflammation should be persistently followed, as hot douches, painting the roof of the pelvis with iodine, using tampons of boro-glyceride, etc. Ichthyol is a most valuable remedy in these cases used as a suppository, or a dressing within the vagina.

Any condition which interferes with the free discharge of the flow produces what is known as *mechanical dysmenorrhœa*. These obstructions are various, and include stenosis of the cervix at either the internal or external os, acute flexions, or pressure of tumors as fibroids or polypi that have found lodgment in the cervical canal. Under this head may be classed cases of imperfect development of the uterus, and usually with ante flexion. The pain of obstructive dysmenorrhœa is spasmodic in character, blood accumulates behind the obstruction, and the contractions of the uterus to force it by the obstruction, occasion it. As soon as the blood is discharged the contractions cease, the patient is relieved and so remains until the accumulated blood is again forced off. The paroxysmal character of the pain will assist in making a diagnosis.

Prognosis may be good or bad, depending entirely upon our ability to relieve the obstruction. Medicines will be of but little avail; this class of cases of necessity can only be assisted by the surgeon. If the stenosis be at either os, a thorough dilation of the canal may cure. Dilation and curettment may also be employed when the uterus is flexed. Flexions of the uterus are nearly always accompanied by congestion of the mucous membrane. Removal of growths, if such exist, must be done.

Membranous dysmenorrhœa is that form in which after a time the paroxysm of pain is followed by expulsion of a membrane from the uterus. These membranes show a smooth reddish inner surface upon which the orifices of the utricular glands may be seen by the naked eye and an external rough, uneven surface which appears as though torn from its connections, and at times contains small blood clots. In many cases the membrane is a complete sac containing three openings corresponding to the os uteri and orifices of the tubes.

The symptoms of membranous dysmenorrhœa are not different from those of other forms of dysmenorrhœa. The pain, how-

ever, is extremely severe, paparoxysmal in character, usually the most severe just before the membrane is expelled. In nervous patients, hysterical conditions are not uncommon. The flow may be scanty in fact usually is. The membrane is cast off from the second to the fifth day. Occasionally the membrane is cast off without pain. Patients with membranous dysmenorrhœa are usually sterile, but if pregnancy should supervene, they may afterwards menstruate normally, though cases are reported where pregnancy did not effect a cure. Prognosis is not very favorable.

Treatment.—Many remedies have been employed for this trouble and sometimes with benefit. The most popular method is thoroughly dilating and curretting the uterus. Cauterization of the uterine canal with nitrate of silver, tincture of iodine, or carbolic acid may be tried. The introduction of suppositories containing iodoform has been recommended by Skene. Dilating the uterus, curretting and cauterizing the endometrium with the Paquelin cautery, followed by packing the uterus with iodoform gauze has met with success. For the immediate relief of pain the same remedies as are employed in the other forms of dysmenorrhœa should be employed. A resort to opium is only to be thought of when all other remedies have failed to relieve.

LEUCORRHŒA.

By the term *leucorrhœa* is commonly meant any discharge other than blood coming from the genitals, though literally the term means a white discharge. These discharges from the vagina are popularly called the "*whites*." They may come from any point along the genital mucous membrane, from the vulva, the vagina, the cervix, or the body of the womb, and are caused by many different pathological conditions, but there are, however, forms of leucorrhœa which may be regarded as physiological, such as the large quantities of mucus poured out often during pregnancy. The abundant discharge of mucus preceding and following menstruation cannot be considered pathological. Also in girls suffering from amenorrhœa there is in many instances from time to time profuse discharge of mucus which takes the

place of proper menstruation and has been called "*menstrual leucorrhœa*." These forms of leucorrhœa require no treatment. A very considerable number of cases of leucorrhœa may be regarded as catarrh of some portion, or all, of the genital mucous membrane, very much of the same character, as catarrh of other mucous membranes, as of the respiratory tracts or the alimentary canal. In the respiratory tract we have bronchitis, laryngitis and nasal catarrh; in the alimentary canal, diarrhœa.

What is true of these membranes is also true of the vaginal and uterine, they alike are influenced by climatic changes and a severe leucorrhœa may be lighted up by exposure to cold, checking suddenly the secretions of the skin, or while attending to calls of nature, draughts of air blowing over the exposed mucous membrane of a patulous vagina may give rise to it. Leucorrhœa is not uncommon in women suffering from tuberculosis, or any strumous diathesis, and often in these cases the mucous membrane presents no discoverable anatomical lesion. Sometimes, however, the mucous membrane is attacked by tubercle, and then severe lesions present. Hereditary or acquired syphilis will produce leucorrhœa of a very intractable form and it often coexists with gout and rheumatism. Whenever the tissues are badly nourished and the patient is greatly debilitated, mucus discharge from the vagina is easily induced. All of the foregoing influences will, it is true, induce leucorrhœa, but by far the most important and most frequent cause of the discharge is some uterine disorder marked by lesion of structure as the inflammatory diseases of the vagina and uterus, such as specific (gonorrhœa) and non-specific, tumors (malignant and non-malignant), displacements and lesions of structure, such as those following confinements. Hence, leucorrhœa should be considered, especially if constant, as extremely significant of uterine disease. If intermittent entirely disappearing from time to time, it is not so likely to be an indication of uterine disease.

The occurrence of leucorrhœa in children is deserving of especial attention. It sometimes follows the acute exanthematous diseases especially scarlatina. Ascarides sometimes find their way from the rectum into the vagina, and set up a severe irrita-

tion with discharge. Strumous children are very subject to this trouble.

Prognosis.—This must depend upon the cause entirely.

Treatment.—If the condition depend upon a constitutional cause, the treatment must be general as well as local; but if to a local cause, treatment may be confined to the seat of the disease. The digestion and the bowels should be carefully attended to. Good food, warm clothing, and plenty of out-door exercise will aid in restoring the vigor of the general constitution. Frequent bathing, and rubbing the surface thoroughly with towels should not be neglected. In strumous cases, tonics, such as gentian, colombo, nux vomica, with iron and cod-liver oil, will be of benefit. Aletris cordial, hydrastis, and cimicifuga have been recommended as having the effect of directly checking the flow. The local treatment may consist of applications to the parts of tincture of iodine, solutions of nitrate of silver, carbolic acid, chloride of zinc, etc. I have found in certain cases great benefit from the use of suppositories made after the following formula:

℞ Acidi tannici.....
 Acidi gallici
 Bismuthi subnitratis.....aa.....gr. iij-v.
 Olei theobromæ.....q. s—M.

Ft. suppositorium no. i.

Sig.: Insert into the vagina after a douche of warm water at bed time.

These suppositories used, one daily, for a time check the secretions and often effect a cure. If the trouble arises from lacerations of the cervix, these should be restored by operations. If the trouble is due to endometritis or cervicitis a curettment of the uterus will often effect a cure. In any case the cause of the trouble should be diligently sought out and removed.

VAGINITIS.

Vaginitis or colpitis are terms used to designate inflammation of the vagina. There are two forms, the acute and chronic. If the disease lasts a period longer than three weeks or a month, it is then spoken of as chronic, prior to this time as acute. Of the varieties of vaginitis we have the *catarrhal* in which inflam-

mation of the mucous membrane is only so severe as to occasion a discharge of mucus or muco-purulent matter. Under this head are grouped nearly all of the ordinary inflammations of the vagina, including the gonorrhœal. When the inflammation is of such character that a solid exudate is thrown out or into the mucous membrane we have what is termed *exudative* vaginitis. This form of inflammation is due to diphtheria. Sometimes the inflammation is situated within the connective tissue about the vagina. It is then known as the *phlegmonous* variety and is sometimes so severe as to occasion the sloughing of a great portion or all of the vaginal wall.

Catarrhal vaginitis may occur from exposure to cold, from infection, from the introduction of foreign substances, from irritating injections, etc. In children it may be caused by the presence of ascarides, by neglect of cleanliness, and by improper handling of the parts. Vaginitis often follows attacks of the exanthematous diseases, but its most common cause is gonorrhœal infection.

Gonorrhœal vaginitis is very apt to extend from the cervical canal to the endometrium, and from thence to the tubes and ovaries. It is also apt to spread to the urethra.

Among the causes of vaginitis are excessive coition and masturbation. Old women sometimes are troubled with a very intractable form, the cause of which it is difficult to ascribe to anything but old age.

The symptoms of vaginitis are those of inflammation elsewhere, as heat, pain, redness and a feeling of general discomfort. In the acute elevation of temperature frequently happens. Urination gives a sense of smarting. On examination the mucous membrane will be found to be red and swollen. Shortly after the onset of the trouble a discharge of mucus begins from the membrane, soon followed by pus. If the urethra is involved as it is likely to be, pressure along it with the finger will usually be followed by the discharge of a few drops of pus from the meatus. If the inflammation does not subside within three or at most four weeks, it is said then to have become chronic. At this time usually the symptoms will have in large measure subsided, except the discharge, which may continue copious and purulent.

Gonorrhœal vaginitis is particularly liable to become chronic. The diagnosis of vaginitis is readily made out on examination with the speculum and the vivid red membrane is at once noted with the discharge. Care should always be exercised that a diagnosis of vaginitis be not made from the discharge alone, for that may come from the interior of the womb, from a pelvic abscess, from malignant growths, etc. The question often arises, can we say with certainty whether a given case of vaginitis is of gonorrhœal origin or not. There has been much controversy regarding the matter, but the best authorities affirm that the presence of gonococci is conclusive proof of gonorrhœal origin.

Prognosis.—Is good in a large proportion of cases, but when it becomes chronic it may last for years.

Treatment.—Patients with acute vaginitis should remain in bed or at least keep quiet while the acute symptoms last. The bowels should be kept open with salines, the diet restricted, and hot water injections given twice daily. If the parts are much swollen, poultices of emollient substances, as linseed meal or chamomile flowers, may be applied. Tampons saturated with glycerine and laudanum may be inserted, giving much comfort to the patient. After the acute symptoms have subsided, solutions of mercury bichloride (1 to 5000) may be injected with benefit. Solutions of permanganate of potassium are also recommended as injections. In this stage of the trouble I have found suppositories containing tannic and gallic acid with sub-nitrate of bismuth to be of great value. Internally ol. santal, bals. copaiba and cubebs may be given with benefit.

METRITIS.

We understand by the term metritis an inflammation of the uterus. As of inflammations elsewhere we recognize the *acute* and *chronic* forms. Of these forms there has been by different authors, a variety of classifications which will not be here considered. Metritis is one of the most common troubles of the uterus. A variety of terms have been applied to inflammations of the uterus designed to indicate the part of it, involved in the trouble as, *endometritis*, meaning inflammation of the mucous

membrane lining the uterus; *parenchymatous* or *corporeal metritis*, inflammation of the muscular portion or body; *cervicitis*, inflammation of the cervix and *endocervicitis*, inflammation of the lining membrane of the cervix. Seldom, if ever, does the body of the uterus (the muscular layer) become inflamed except as an extension of the disease from the mucous membrane. The mucous membrane of both the body of the uterus and the cervix may be quite severely inflamed for a long period of time without its extension to the muscular layer.

Metritis is, in the vast majority of cases, due to either gonorrhœa, or is a sequence of the puerperal state, but may be due to other causes as, gynecological operations, the introduction of a sound, curettment, etc., when done without proper aseptic precautions; or it may be caused by exposure to cold and wet, especially at the time of menstruation. Metritis sometimes follows the exanthematous diseases as well as typhoid fever and syphilis.

Symptoms.—The acute stage of metritis is accompanied by fever, the uterus is painful to the touch, and the patient complains of cramp-like pains in the lower part of the abdomen. Nausea and vomiting are usual, and diarrhœa, with painful urination. Menstruation is often profuse, but is sometimes completely suppressed. With these symptoms is an abundant discharge of purulent matter from the uterus. Especially is this true when the metritis is due to gonorrhœa. On vaginal examination the uterus is seen to be inflamed, and is very tender to the touch. The prognosis is usually favorable, but the disease may extend to the tubes and ovaries, when it becomes difficult to cure. If it continues three or four weeks, becoming chronic, the probability of a rapid and complete cure is greatly diminished, and especially if there is evidence that it has extended to the tubes and ovaries.

Treatment of Acute Metritis.—The patient should remain in bed while the acute symptoms continue. To relieve the pain, heat should be applied to the abdomen. Sometimes the application of cold in the acute stage (as an ice bag to the lower part of the abdomen) will give comfort, but cold should not be applied if there is menstrual suppression. Douches of plain hot water

should be given as often as three times daily or more frequently if they give comfort. Sometimes hot water is not well borne, then tepid water should be tried. Flax-seed and slippery elm have been recommended as a valuable addition to the water. If the pain is very severe it may be necessary to administer an opiate, which is best given in the form of a suppository. Tampons saturated with boroglyceride and glycerine in the proportion of 3j. boroglyceride to O.j. of glycerine, introduced into the vagina, will produce a profuse watery discharge and relieve the congestion and pain. Ichthyol and glycerine may be used in the same manner with benefit.

Gonorrhœal metritis is treated best by washing out the uterus once a day with bichloride solution (1 to 2,000), until the acute symptoms have subsided, when the endometrium may be painted (twice weekly) with a 10 per cent. solution of nitrate of silver. Curretting the uterus and packing with iodoform gauze is effective. The gauze acts as a drain and keeps the uterus free from pus. If these more active methods of treatment cannot be adopted in a given case of gonorrhœal metritis, the treatment for acute metritis not of gonorrhœal origin, as described, can be adopted, together with the internal administration of anti-blenorrhagic drugs, as bals. copaibæ, ol. santal, etc., though these remedies should be given in smaller doses than to men.

Chronic Metritis proceeds from the acute form, or is slowly developed from a lesion of structure at some point of the uterus, which allows of the introduction of infection. The most common form of lesion productive of chronic metritis are the lacerations of the cervix, so frequently following child bearing. Usually in these cases the uterine tear has prevented the return of the uterus to its normal size after labor and a condition of subinvolution exists. The whole organ may be involved or only the cervix, or as often happens the inflammation is confined to the mucous membrane lining the cervix and is then called *endocervicitis*, or to the mucous membrane of the body, then called *endometritis*. Tumors, malignant and non-malignant, may act as predisposing causes of chronic metritis. A condition of hardening sometimes follows long continued inflammation and anæmia of the uterine structure, the tissue becoming cicatricial in

character when it is known as uterine *sclerosis*. The condition is incurable and function of the uterus practically ceases.

With chronic metritis we have the prominent symptom of pain. The patient often complains of a "bearing down" sensation, is troubled with cramps, and frequently with an irritable bladder. Dysmenorrhœa is usually an accompaniment of metritis with prolonged menstruation, and frequently bloody discharges in the interval between the menstrual periods. Sometimes, however, in very weak patients, the condition is accompanied with menstrual suppression. Usually there is copious leucorrhœa, and the appearance of this discharge is characteristic. From the cervix it resembles much the white of eggs, and from the uterine body is milky in appearance. The general symptoms are, loss of appetite, with nausea, dyspepsia and constipation. The patient often loses flesh, becoming anæmic and weak. Backache and pain in the lower abdomen is usual. The patient is hysterical and melancholy, and usually remains sterile. On vaginal examination, if the disease is a result of child-bearing, we find the os patulous, the cervix enlarged and inflamed, possibly studded with hard nodules (the follicle of Naboth), and showing evidences of laceration. Care should always be taken not to confound cancer with inflammation. When the cervix is hardened with inflammation and the follicles enlarged, they may present very similar appearances. A curette, however, will clear up the diagnosis. If the case is cancer, on curettment friable tissue is always brought away. If inflammation, the tissues are firm, and the curette only makes the part bleed, and denudes it of a little mucous membrane.

Prognosis—Of chronic metritis is uncertain, but a slow and tedious recovery is to be anticipated.

Treatment.—Patients suffering from endometritis should take plenty of rest. Employment that requires a great deal of exercise should be prohibited, especially work with sewing machines. The bowels should be kept open and sexual intercourse as much as possible interdicted. Bathing frequently should not be neglected. A sitz-bath occasionally will be found of benefit. Hot water douches should be given twice daily. If the cervix is much eroded, painting the erosions with tinct. iodine comp., a

solution of nitrate of silver, carbolic acid, chloride of iron or chloride of zinc will be beneficial. Iodine is most commonly used. Applications of iodine may also be made from time to time to the endometrium with a bit of cotton wrapped upon a probe. If the remedies above recommended fail to cure, it will be best to thoroughly dilate the uterus, curette the endometrium and if of very long standing, cauterize it with the actual cautery or after the curettment the uterus can be packed with iodoform gauze or a drainage tube inserted and thoroughly drained. If the cervix is lacerated the laceration should be repaired. If the treatment proves of no avail and the disease has extended to the tubes and ovaries they may have to be removed. Constitutional treatment should not be neglected, as the administration of tonics, looking after the secretions, etc.

CHAPTER IV.

FIRST HELP IN SURGICAL EMERGENCIES.

BY J. H. POOLEY, M. D.

PREFATORY.—The few desultory notes on various disconnected subjects which make up this chapter are not intended as a complete discussion of any subject, but simply hints which may be referred to in an emergency and suggest some line of conduct which may be adopted while arrangements are made for regular and permanent treatment. Nothing new is offered, nor is there any pretense to novelty, even in the presentation of the subject. But sometimes the old and hackneyed, if apposite to the case, and easy of reference, is of more value at the time than the most learned and exhaustive discussion. If these suggestions prove in any instance of assistance to the young doctor, who is generally burdened with knowledge which he does not know how to use, they will not have been written in vain.

BURNS.

The extent of surface affected is of more importance than the depth or destruction of tissue involved. When a very large surface, especially over the trunk, is involved the prognosis is grave. The first attention in a case of burns includes both local and general treatment. Locally, tense blisters should be evacuated by small punctures and gentle pressure, and the epidermis allowed to fall down over the abraded surface. Any dressing that will exclude air will answer the purpose, though if convenient carbolic acid may be added both for its anæsthetic and its antiseptic properties.

Flour, freely sprinkled over the surface from a dredging box, is almost always available.

Oil of any kind thickened with chalk, whitening, bismuth, or any similiar substance is an excellent dressing. The so-called carron-oil a mixture of linseed oil and lime water is a common application and efficient, but it is a nasty ill-smelling dressing.

Prof. S. D. Gross highly recommended common white paint reduced to a proper consistence with oil and freely painted over the surface. He says that no fear need be entertained of the constitutional effects of lead. Cotton, though recommended by some, is a bad dressing, and only to be used when nothing else can be had. After the dressing, whatever it is, has been freely applied on pieces of soft old cloth, it should be retained by loose bandages. The pain of burns, especially of the superficial kind, is very severe, and demands the administration of opium or some of its preparations. These may be given freely in adults, but in children great care is necessary in their use. Shock, and in children convulsions, are common in severe burns, and demand stimulants, such as spirits, hot beef tea, etc., by mouth or rectum.

In cases where steam or heated air have been inhaled, severe inflammation of the mouth and fauces may result; the frequent administration of oil, or vaseline, or lard will give relief; if œdema of the glottis results, tracheotomy may be necessary to save life.

COLD. (Exposure to).

The effects of intense cold may be either general or local; the first result of general exposure to cold is stimulating, but this is quickly followed by depression, pallor and coldness of the surface, with pain and numbness, followed by drowsiness, which, if indulged, ends in coma and death. Death from cold resembles apoplexy.

To restore a person insensible from exposure to cold, the patient should be placed in a cool room, the surface rubbed with snow, or flannel cloths, wet with whiskey or dilute alcohol. Artificial respiration must be resorted to in extreme cases. When reaction begins, the temperature of the room may be raised, and

the body wrapped up in warm blankets. Stimulants should be administered in moderate doses, at short intervals; if the patient cannot swallow, they may be given per rectum. Persevere in these efforts, as some cases have been rescued from apparent death only after hours of vigorous treatment.

The local effects of cold are divided according to their severity, into chilblains, and frost-bite. The frozen part at first appears red, purple, or mottled, afterwards white or waxy, and is hard and stiff. Care must be taken not to restore circulation too rapidly. First rub the part with snow, afterwards with the warm hand, or some stimulating liniment.

If gangrene results, treat locally with antiseptic dressings and await results. Constitutionally good food, tonics, and anodynes to relieve pain if present, are indicated.

DROWNING.

To resuscitate a person in a condition of suspended animation from drowning, the body should first be inverted, held head downward for a few seconds, to let the water run out of the mouth, fauces, and œsophagus; then removed to a warm room, and the surface dried and vigorously rubbed with woollen cloths. The tongue should be drawn well forward and artificial respiration practiced either by Marshal Hall's or Sylvester's method, care being taken not to repeat the steps of the process too rapidly. The great thing in these cases is perseverance. Vigorous efforts should be kept up at least half an hour, and if there is the least encouragement, much longer. When reaction begins it may be favored by mustard applications to precordia and spine, and hypodermic injection of strychnia $\frac{1}{8}$ to $\frac{1}{4}$ gr.

DISLOCATIONS AND FRACTURES.

Until preparation can be made for reduction and permanent dressing of these injuries the limb should be placed in a comfortable position and adequately supported. Care and gentleness should be exercised in the removal of clothing; it is frequently better to cut the clothes along seams, than to attempt removal in the ordinary way. As a temporary splint in case of

fracture, almost anything will answer, a pasteboard box, a magazine or paper-covered novel, or a bundle of newspapers. In fracture of the lower extremity the so-called comforter splints serves an excellent purpose. This is prepared by taking an ordinary bed comfort and spreading it flat upon a table or the floor; then two persons, one on each side, roll their respective halves into as compact and even a cylinder as possible. The limb is then placed between the two cylinders thus formed, and tied tightly with strips of bandage or handkerchiefs. This makes a very efficient and comfortable splint, for the first twenty-four hours or more, while arrangements are made for permanent treatment.

FOREIGN BODIES IN EYE, EAR AND NOSE.

Foreign bodies such as small fragments of coal-cinders, sand, straw, stone, steel, etc., may be either lodged in the folds of the conjunctiva, particularly the superior cul de sac, or impacted in the cornea. In the first, order the patient to look up while you depress the lower lid and carefully explore the lower cul de sac. Failing to find it here you direct him to look down, then seizing the lashes of the upper lid you evert it over the end of a match, point of a pencil or your finger-tip; you thus expose the whole conjunctival surface, and cannot fail to find the particle if present, it is then easily removed with a camels hair brush, or the corner of a handkerchief.

Pieces of granite or steel frequently become firmly impacted in the cornea of various workmen. The eye should be anesthetized by a few drops of a four per cent. solution of cocaine mur., when the body can be easily picked out with a cataract needle, point of a lancet or similar instrument.

Foreign bodies in the ear are generally met with in children who often mischievously or carelessly thrust such things as buttons, beads, pebbles, grains of corn, etc., into their own, or others ears. These bodies can almost always be removed by syringing with warm water; the auricle should be firmly drawn backward and a little upward, and the water thrown up the floor of the meatus with some force. This almost invariably succeeds if persevered in, and is perfectly safe.

No other attempt at removal should be made without full illumination, and clear sight of the object, which may then be removed by forceps, or a probe or ear spoon introduced behind it and used as a lever.

Bodies similar to those put into the ears are also sometimes thrust up their nostrils by children. With a good light, the assistance of the ear mirror, and a little quickness and slight of hand, they do not often give much trouble. If they cannot be extracted they can sometimes be thrust backward into the throat. If left they are apt to set up a more or less violent inflammation, sometimes with profuse, ill-smelling discharge; indeed the presence of such symptoms in a child should excite suspicion, and lead to careful search for some foreign body. I have known a head of timothy grass thus retained in the nose for many months.

GAS. (Asphyxiation from).

Persons not infrequently become asphyxiated from breathing for hours an atmosphere loaded with illuminating or natural gas. This may occur either accidentally or intentionally. Such persons are generally found profoundly insensible, breathing slowly, perhaps stertorously, with a feeble pulse, perhaps no pulse perceptible at wrist, with pale or livid countenance and exhaling a strong odor of the gas. There can be no doubt of the advisability of blood letting in these cases, if the blood can be got to flow. It relieves the strain, and gets rid of some of the gas with which the blood is loaded. Other means of resuscitation, sprinkling water in the face, holding ammonia to the nostrils, etc., together with artificial respiration should be tried. Of course doors and windows should be thrown wide open, even in cold weather. The gravity of these cases depends upon the length of time the patient has been breathing the poisonous atmosphere; but as in similar cases of asphyxiation by drowning, etc., we should persevere while there is a ray of hope, though the directly poisonous effects upon the nerve centres makes them a very fatal class of cases.

HEMORRHAGE.

As the various forms of internal hemorrhage are considered elsewhere in this work, we shall confine ourselves here to hemorrhages from wounds. Hemorrhage from wounds where no considerable artery is opened generally ceases spontaneously in a few moments if freely exposed to the air, and many of the devices resorted to serve rather to keep up the bleeding than otherwise. The temporary control of hemorrhage, which is all we are considering here, can generally be accomplished by pressure either directly over the wound, or over the main artery, between it and the heart. Direct pressure is generally sufficient, especially when it can be made over a bony surface, as on the skull. In wounds of the extremities accompanied with severe bleeding, pressure should be made over the course of the principal artery, above the wound. This is most efficiently done by means of an elastic ligature or bandage. An india-rubber cord or tube, or an elastic suspender, or garter drawn tightly round the limb, generally suffices. If the blood is dark and the flow apparently increased by pressure above, it is venous, remove all bandages, and rely on direct pressure. Avoid styptics, especially cobwebs, which from the soot they often contain may leave an indelible mark, like a tattoo-mark.

HERNIA.

Hernia, or rupture, as it is commonly called, is a very common affection. It consists in the protrusion, through natural or accidental openings, of some of the abdominal contents. The great danger in these cases is strangulation, which is preceded by inability to return the hernial contents to the abdominal cavity, as the patient has been in the habit of doing, it may be, for many years. This returning, or reduction of the hernia, is called taxis, and should be accomplished without force or violence. A physician or surgeon who is determined to accomplish the reduction if strength of hand can do it, is a dangerous person.

In performing taxis, bear in mind the anatomical direction in which the hernia must return, if at all. Then, after gently but persistently compressing the base of the tumor for a few

minutes, endeavor to return or push it back, remembering that the part that was last to come out must be first to go back. Should one attempt of this kind fail, the patient may be left for an hour or two with ice applied to the tumor, and then another effort made, under ether, being prepared, if this fails, to proceed with the necessary operation; the great danger in these cases being in delay.

INJURIES TO THE BRAIN.

Concussion or Compression. -By concussion is meant a jar to the cranial contents, a molecular disturbance of the brain substance, which may lead to loss of consciousness and other symptoms, varying in gravity from a momentary dizziness to those which threaten to be fatal. Whether there can be any such condition without actual injury to brain substance or blood vessels is a matter of doubt, and likely long to remain so, as cases of concussion pure and simple give no opportunity for post mortem examination. Compression, or pressure upon the cranial contents may be immediate from depressed bone or hemorrhage; or later from inflammatory products.

With the first only are we concerned; the diagnosis is not always easy. But if there is fracture with evident depression of bone, the accompanying symptoms are due to compression. In compression we have generally contracted pupil, small thready pulse, often stertorous breathing, and generally paralysis (hemiplegia). In concussion the pupils are dilated, or one dilated, the other contracted, in but few cases is consciousness completely abolished, and there is generally nausea and vomiting.

In all these cases of head injury the patient should be kept perfectly quiet, in a darkened room, and nobody allowed to approach him except those that are *absolutely* necessary. The head should be elevated, and ice or cold water compresses applied. If the vital powers are very much lowered, as indicated by pale and cool surface, small and irregular pulse, artificial heat by means of hot bottles, water-bags, etc., should be applied. Stimulants, if given at all, should be used with care in small doses, and at considerable intervals. In those cases which are accompanied with great restlessness, or convulsions, or severe

pain, morphine may be given hypodermically with advantage.

The old-fashioned practice of bleeding, or administering an active purgative in these cases, is of doubtful utility at the best, and may do more harm than good. Above all, bear in mind Percival Pott's celebrated aphorism, as true to-day as when it was first uttered: "No injury of the head is so slight as to be despised, or so grave as to be despaired of."

POISONED WOUNDS.

Under this head we mean especially wounds received in the dissecting room, or in making post-mortem examinations, the latter of which are the more dangerous. These wounds are generally upon the hand or fingers; after letting water run over the part for a moment, or just rinsing it in water, apply to the mouth and suck with all the force possible, then cauterize thoroughly with nitrate of silver, which though of very feeble power as a caustic, coagulates the albuminous fluids in and about the wound, forming barrier to absorption, and perhaps neutralizes the poison itself. In the absence of the nitrate any strong acid or alkali, or tincture of iodine, may be used, or even strong alcohol. In snake-bite, a ligature tied tightly between the wound and the heart, with strong suction, should be practiced at once, pending the arrival of professional assistance. In bites from suspected dogs, Mr. Youmans, who is certainly high authority, places great reliance on the application of nitrate of silver.

POISONING.

In cases of poisoning or suspected poisoning, there are certain general measures which may be taken even when the nature of the poison is unknown, or before a proper antidote can be procured. Prominent among these is the production of free vomiting by any means at hand, such as salt and water, mustard and water, tickling the fauces with a feather, or the finger. After vomiting has been produced let the patient drink large quantities of warm water, or if there is much pain and irritation diluent drinks, such as milk and water, soap and water, flax-seed tea or the like if procurable. If there is a tendency to

drowsiness this should be combatted by every means in our power, keeping the patient walking about, switching the surface etc., etc. In poisoning cases all suspicious powders, mixtures, vials etc., should be taken possession of, and preserved pending the result, as they may be of the utmost importance later on. It would always be well also to preserve the matter *first* vomited. Keep your eyes wide open, observe everything, and say nothing.

SHOCK.

This is the sudden depression of the vital powers, brought about by accident or injury. The factors which enter into the cause of shock are various. Among them may be mentioned extensive destruction of parts, pain, when severe or protracted; this is exemplified in the case of extensive burns; hemorrhage, mental impressions, and direct assault upon nerve centres. Shock, even to a fatal degree, has been the result of evil tidings suddenly communicated, or of blows upon the epigastrium, when no serious injury could be recognized.

The principal symptoms are, more or less, complete loss of consciousness, with or without delirium, pain, or its complete absence even when frightful mutilation has been sustained. Palor and coolness of surface, sub-normal temperature, weak, flickering pulse, or absence of pulse at wrist, and, in extreme cases, muffled and imperfect heart sounds, sighing, irregular respiration, cold sweat, especially about the brow; and when there has been much hemorrhage, jactitation and thirst. Death may result in a short time, or the patient may recover even after a very severe and protracted attack. Generally reaction begins in two or three hours.

The treatment of shock consists entirely in efforts to restore the vital powers, or as it is technically phrased to bring about reaction. Any hemorrhage that is going on must be stopped. The patient placed in a warm bed in the horizontal position, with the head low. Sometimes it is advantageous to raise the foot of the bed. External warmth should be promoted by hot water bottles or bags; or hot bricks or irons, care being taken not to burn the patient, who is not in a condition to give warn-

ing when applications are too hot. Stimulants should be administered in extreme cases by rectum or hypodermically. If given by the mouth, care is necessary lest an overdose be administered, as absorption as well as other functions is in abeyance, and if the stomach be filled with alcohol an injurious amount may be absorbed when reaction comes on. Where great pain or restlessness is present, or there has been much hemorrhage, opium in some of its forms may be freely given. As a general rule, operations should be postponed till reaction is established or at least well began; but this rule does not apply to cases of abdominal injury where operation may be called for. In such cases the operation should be proceeded with as speedily as possible, as the only way of preventing a fatal result.

SPRAINS.

By a sprain is understood a wrenching, stretching, or rupture, partial or complete of the ligaments of a joint, or its partial dislocation. The ankle is the joint that most frequently suffers, and there are all possible degrees in the severity of the injury. Pain is generally severe, and sometimes accompanied by nausea or vomiting, there is always more or less discoloration (ecchymosis) sometimes quite extensive. The best immediate application is hot water, this should be applied as hot as can be borne, and frequently changed. This application may be continued for twelve or twenty-four hours, after which it is of doubtful utility, and should be followed by a snug, smoothly applied flannel bandage. If swelling and pain persist after two or three days the joint should be immobilized by a plaster of Paris bandage, to be retained two or three weeks, and then reapplied if necessary. When pain and swelling have nearly disappeared, but there is still some stiffness and pain on motion, rubbing with some anodyne liniment may be of use. A sprain often leaves some weakness, with occasional pain in the joint for years.

CHAPTER V.

ANÆSTHETICS AND THEIR MODE OF ADMINISTRATION.

Anæsthetics are those agents which are employed for the prevention of pain, especially when used in surgical practice and during labor. They are likewise used to produce relaxation of muscles, when needed in reducing dislocations and hernia, or in setting fractured bones. They may be also resorted to in making diagnosis in cases of obscure abdominal tumors and in supposed malingering.

Anæsthesia may be produced by benumbing the part to be operated on by means of cold, by intercepting nervous communication, and by arresting the activity of the nervous centres concerned in sensation. They may be local or general in their action (Horwitz).

The Introduction of Anæsthetics.—This great event has cast a wide-spread influence upon the progress of surgery. In 1842 Crawford W. Long, of Georgia, removed a tumor with the patient under the influence of an anæsthetic. No further attempt was made until 1844, when Wells had a tooth extracted while insensible with nitrous oxide gas. Morton, at the suggestion of Dr. Jackson, anæsthetized a patient on October 16th, 1846, while Dr. J. C. Warren removed a tumor from the patient's neck. From this time on, anæsthesia, hitherto a dream, now became a living reality. To Jackson, Morton and Wells, the profession is indebted for this great discovery, which is the greatest boon to suffering humanity.

There is one sad event, however, connected with this discovery, and that is the melancholy termination of the life of each of the three men associated with it. Jackson died insane;

Morton died without worldly means; Wells became a pauper and was arrested in New York city as a criminal for throwing vitriol. He was sent to jail, and there committed suicide by cutting his femoral artery. It is interesting to note in this connection, that Sir Edward Jenner, the discoverer of vaccination, was awarded \$225,000 for his discovery by an act of Parliament while by no act of the United States Government has anything been done to perpetuate the memory of these three men. The physicians of Hartford have erected a statue to Wells (Dennison).

Important Anæsthetics.—The important anæsthetics are 1. Ether. 2. Chloroform. 3. Nitrous oxide gas. 4. Bichloride of methylene. 5. Bromide of Ethyl.

Physiological Actions.—When the vapor of ether or chloroform is inhaled, a sense of faucial irritation and of the need of air is experienced, and more or less cough is produced. The irritation of the fauces excites the flow of mucus, and the reflex action of swallowing. The feeling of the need of air causes the patient to push aside the inhaler or sponge, and in children this may lead to violent struggling. The irritation soon ceases and inhalation then proceeds quietly. The first effect is a general exhilaration, the pulse increases in frequency, the respiration becomes more rapid, the face flushes, talking, laughing, crying, singing, and sometimes praying indicate the cerebral intoxication. This stage of excitement varies in duration in different individuals. At this period, although the patient can be easily aroused, sensibility to pain is decidedly diminished. If the inhalation is continued, the patient passes into the condition of complete insensibility.

In women and children, and males reduced by illness, the production of insensibility, if the anæsthetic be not inhaled rapidly, takes place quietly; but if the subject be a robust man in full health, the stage of insensibility is preceded by a tetanic convulsive stage, in which the voluntary muscular system and the respiratory muscles become rigid, the breathing stertorous and the face cyanosed. If the inhalation of the anæsthetic is pushed still further, the tetanic rigidity subsides, the cyanosis disappears, the breathing proceeds quietly, and a condition of complete muscular relaxation, and of abolition of reflex movements

is established. When this is accomplished, the arm drops without resistance when let fall, the conjunctiva is insensible to irritation, the pupils do not alter in size when exposed to light, and there is no consciousness of pain. The surface is cool, and bathed with abundant perspiration, the countenance is placid, the eyes closed, the pupils rather contracted than dilated; the respiration easy, but more shallow than normal; the pulse slower—it may be feebler, it may be stronger than in health. The functions of the cerebrum are suspended; only the lower centres, presiding over respiration and circulation, continue in action (Bartholow).

Modes of Dying from Anæsthetic Vapors.—1. By the first mode, the death is sudden and occurs very soon after the inhalation has begun, and is ascribed to “irritation of the peripheral nervous system, accumulation of carbonic acid in the blood, and arrest of the action of the heart.” The chloroform vapor seems to paralyze the cardiac ganglia. This accident sometimes occurs in persons who have previously taken the anæsthetic without unfavorable symptoms of any kind.

2. By the second mode, death ensues in the stage of rigidity preceding complete muscular relaxation, and is due to tetanic fixation of the respiratory muscles. In these cases respiration ceases before the pulsations of the heart cease.

3. By paralysis of the respiratory muscles, death ensues during the stage of complete muscular relaxation, and the action of the heart continues for some seconds, or even minutes, after respiration has ceased.

4. By paralysis of the heart. This also occurs in the course of complete insensibility; the motor ganglia are paralyzed, and the heart suddenly ceases to act, the respirations continuing for a short time longer.

5. This mode of dying is made up of two factors: Depression of the functions by chloroform narcosis, and the shock of the accident or surgical operation. Death may ensue during the inhalation, or may occur afterward (Bartholow).

Conditions of the Organism Rendering the Use of Anæsthetics Dangerous.—1. Experience has proved that old drunkards are very unfavorable subjects.

2. When a tumor or abscess of the brain exists, it is dangerous to administer anæsthetics.

3. Very much enlarged tonsils, swollen epiglottis, œdema of the glottis are contraindications.

4. Emphysema and fatty heart are unfavorable conditions for an anæsthetic. Experience has demonstrated that the reduced by illness, and the feeble, bear anæsthetics better than the healthy and robust; that children and women are better subjects than men; that anæsthetics are safer when given for operations for disease than for injury.

5. Incomplete anæsthesia is a condition of danger. Many accidents have occurred from trivial operations—particularly extraction of teeth—before complete insensibility. In such cases the heart, enfeebled by chloroform narcosis, is suddenly paralyzed by the reflex action proceeding from the peripheral injury (Bartholow).

The chloroform committee of the Royal Medical and Chirurgical Society of London formulated the following rules for administration of anæsthetics:

1. Anæsthetics should on no account be given carelessly by the inexperienced; and when complete insensibility is desired the attention of the administrator should be exclusively confined to the duty he has undertaken.

2. Under no circumstances is it desirable for a person to give an anæsthetic to himself.

3. It is not advisable to give an anæsthetic after a long fast or soon after a meal, the best time for its administration being four or five hours after food has been taken.

4. If the patient is much depressed, there is no objection to his taking a small quantity of brandy, wine, or ammonia before commencing the inhalation.

5. Provision for the free admission of air during the patient's narcotism is absolutely necessary.

6. The recumbent position of the patient is preferable; the prone position is inconvenient to the administrator, but entails extra danger. In the erect or sitting posture there is danger from syncope. Sudden elevation or turning of the body should be avoided.

7. An apparatus is not essential to safety if due care be taken in giving the anæsthetic. Free admixture of air with the anæsthetic is of the first importance, and, guaranteeing this, any apparatus may be employed. If lint, or a handkerchief or a napkin is used it should be folded as an open cone or held an inch or an inch and a half from the face.

8. Chloroform should invariably be given slowly. Sudden increase of strength of the anæsthetic is most dangerous. Three and a half per cent. is the average amount, and four and a half per cent., with ninety-five and a half per cent. of atmospheric air, is the maximum of the anæsthetic which can be required, given cautiously at first, the quantity within this limit being slowly increased according to the necessities of the case, the administrator being guided more by its effect on the patient than by the amount exhibited. Ether may be given more boldly.

9. The administrator should watch the respiration of his patient, and must keep one hand free for careful observation of the pulse.

10. When patients hold their breath, more air should be admitted; and when the movement of swallowing is seen, it should be accepted as evidence that the anæsthetic is stronger than necessary. On any sound of stertor fresh air should be admitted.

11. The patient who appears likely to vomit while beginning to inhale the anæsthetic must at once be brought fully under its influence; the tendency to sickness will then cease.

12. The occurrence during the administration of an anæsthetic of sudden pallor, lividity of the patient's countenance, or sudden failure or flickering of the pulse, or feeble or shallow respirations, indicates danger, and necessitates immediate withdrawal of the anæsthetic until such symptoms have disappeared. The chin should be raised as much as possible from the sternum, and if this movement fail to open the larynx, the tongue should be pulled forward and the head drawn back.

13. Nelaton and Marion Sims advise the inversion of the body, with the view of throwing what blood there is wholly to the brain, on the theory that death from chloroform is, as a rule,

due to syncope or to cerebral anæmia. In the more threatened cases, commence instantly with artificial respiration, whether respiration has failed alone, or the pulse and respiration together. Galvanism may be used in addition to artificial respiration, but artificial respiration is on no account to be delayed or suspended in order that galvanism may be tried. In extreme cases, laryngotomy may be required.

Few, if any, are insusceptible to the influence of anæsthetics, from two to ten minutes being required to induce anæsthesia. The time varies according to age, temperament and habits. A mixture of alcohol one part, chloroform two parts, and ether three parts, which should be mixed fresh before use, should be given in the same way as chloroform alone, care being taken when lint or a handkerchief is used, to prevent the too rapid escape of the vapor. In Vienna the favorite mixture is two parts of ether to one of chloroform. Billroth employs chloroform three parts, ether one part, and alcohol one part (Bryant).

Preparation of the Patient for Taking an Anæsthetic

Before giving ether, the kidneys should be interrogated, and the urine examined. If the kidneys are diseased, it may cause suppression of urine and death. In operations upon the bladder and urethra the shock of the operation and the effects of the anæsthetic are very apt to produce suppression of urine.

If we operate in the afternoon and the patient is aware of the operation, he should have no food after the morning meal. Always avoid solid food for six or seven hours before the time for the operation. This is to prevent vomiting which is liable to follow the administration of ether. Solid particles of food may be drawn into the larynx and produce death. Vomiting, as the narcosis subsides, is usual, and as the insensibility of the glottis persists for some time afterward, particles of food may be lodged in the chink, causing fatal suffocation. Several cases of this kind have been reported. There should be nothing binding about the patient's neck or waist. We should use certain means to anticipate vomiting. Before the inhalation is begun, it is proper to administer an ounce or two of whiskey or brandy. Five or six grains of the bromide of sodium are often given before the operation to prevent vomiting. But much more

portant is the expedient proposed by Bernard, and afterward by Nussbaum, to premise a subcutaneous injection of morphine. Bernard proposed to administer the morphine before giving the anæsthetic. If the morphine be given, there is much less likelihood of vomiting, and if the patient does vomit, it is not so exhausting. When the morphine influence takes place, the inhalation will proceed quietly without the struggling and coughing, and spasmodic breathing, which so interfere with the administration of anæsthetics, especially of ether. The use of morphine subcutaneously also lessens materially, if not prevents entirely, the stage of rigidity and spasm. The quantity of the anæsthetic required is much less, and the stage of insensibility more prolonged, when morphine is thus given.

Besides these advantages, there can be no doubt that this agent antagonizes the paralyzing action of the anæsthetic on the cardiac and respiratory centers, and prevents the subsequent shock due to the administration of the anæsthetic and the performance of a surgical operation. Bartholow proposed the use of morphine and atropine combined as being better than the morphine alone.

When the anæsthetic is about to be administered, the operator should, by a cheerful and confident manner, remove the fears of the patient. None of the *paraphernalia* of the operation to be performed should be exhibited before the patient, and no remarks should be made in his hearing regarding his case, the anæsthetic sleep, or the surgical procedure. Only the physician having the administration of the anæsthetic in charge, and the necessary assistants, should be present in the apartment. An abundant supply of fresh air should be insured to the patient, and all appliances required for resuscitation should be at hand, but not ostentatiously paraded before the patient.

Inhalers. The simplest apparatus only is required. Complicated inhalers have, as frequently as a towel or handkerchief, been used in fatal cases of chloroform narcosis. A cone made of stiff paper, and a towel, with a sponge or absorbent cotton in the bottom of it, and large enough to cover the nose and mouth of the patient, is the best form of inhaler for the administration of ether. Dr. Allis, of Philadelphia, has devised an inhaler

which is much commended. When ether is inhaled, the atmosphere is, as far as possible, excluded, in order that the anæsthetic effect may be quickly induced. The important point in the administration of chloroform is to secure such an admixture of atmospheric air as that the amount of chloroform-vapor shall not exceed three and a half per cent. If this rule be regarded, the form of inhaler is of little importance.

A cloth may be laid over the mouth and nose and the chloroform dropped slowly on it. The mouth and nose should be protected from the irritant action of the chloroform by inunction with oil or vaseline. Chloroform applied to the skin directly produces vesication, and this may be followed by permanent disfigurement of the face. A cone made of a towel, having a large opening at the apex, and containing a suitable, very porous sponge, is now probably more employed than any other form of inhaler for giving chloroform. The typical method for administering it is that of Snow: in a bag of suitable size the vapor of chloroform is mixed with air in the proper proportion, and then given directly. In administering the vapor of chloroform by any of the modes in use, it should not be forgotten that it has a density and weight four times those of air, and that, when a cloth is held closely over the mouth, the air is displaced, and the patient may be breathing little more than chloroform-vapor. During the administration of ether, attention should be directed to the state of the respiration, for arrest of the respiratory movements is the only source of danger. When chloroform is being inhaled, the state of the circulation, as well as of the respiratory apparatus, must be regarded (Bartholow).

Indications of Danger in Giving Anæsthetics.—If the patient becomes very much cyanosed, let up on the anæsthetic, and let him breathe some pure air or oxygen. If the pulse becomes irregular, let up on the anæsthetic. A rapid and feeble pulse, especially if irregular, is a very dangerous symptom. If the respirations become rapid and superficial, let up on the anæsthetic. If the patient vomits, see to it that all foreign particles of food are removed. If the secretion of mucus collects in the throat, it should be wiped away with a sponge on a sponge-holder.

Means of Removing Dangerous Symptoms.—If the heart fails, suspend the patient by the heels. This is to relieve the cerebral anemia. If the respirations fail, we should have on hand a pair of forceps to grasp the tongue with, in case it falls back against the epiglottis, and the skin should be pinched over the diaphragm to stimulate it to contraction, and the jaw should be pulled forward to get free ingress of air. The head should be only slightly raised. We should always have a Faradic battery and a few of the little pearls of nitrite of amyl at hand; the former is to perform artificial respiration, and the latter is to relieve the heart by dilating the blood-vessels, and thus diminishing arterial pressure. Artificial warmth should be applied. Whiskey or brandy may be used hypodermically. Strychnine and atropine are the best respiratory stimulants, and are effective in ether narcosis (A. A. Smith and Bartholow).

Choice of Anæsthetics.—Ether is safer than chloroform in prolonged surgical operations. Chloroform is more pleasant to inhale than ether, and should be used in operations about the nose, throat, tongue, or mouth, owing to the fact that ether is very irritating to the mucous membranes. Chloroform is irritating to the skin, but not to mucous membranes. The stage of excitement is longer from ether than from chloroform. Chloroform is more prompt in its effects, and the narcosis induced by it more sustained, than is the case with ether. The vapor of chloroform is not, and the vapor of ether is, inflammable, whence it follows that the former may be alone admissible at night under some circumstances. If the heart be diseased, ether is the anæsthetic to be used. If the kidneys be diseased, chloroform is the proper anæsthetic. Vomiting and suppression of urine is more apt to follow ether than chloroform (Bartholow and A. A. Smith). A. C. E. mixture, composed of alcohol one part, chloroform two parts and ether three parts, is useful when the operation is to be a very long one. It produces no cardiac depression unless used over twenty minutes. If a man has renal disease and a broken leg, the A. C. E. mixture is the proper anæsthetic. An old alcoholic is apt to have delirium tremens if he gets a broken leg, or a fracture of the skull, or any other injury. The A. C. E.

mixture is the anæsthetic to be used in these cases. This class of patients do not bear any form of anæsthetic well.

After-Effects of Anæsthetics.—The after nausea and vomiting, which are sometimes most depressing, and occasionally dangerous, produced by anæsthetics, may be prevented by the hypodermic injection of morphine and atropine before beginning the administration of the anæsthetic. After the patient emerges from the anæsthetic sleep, the above mentioned unpleasant after-effects may be relieved by a minute quantity of morphine ($\frac{1}{4}$ of a grain) and atropine ($\frac{1}{15}$ of a grain) injected subcutaneously (Bartholow).

After the operation, do not wake the patient, but let him sleep as long as he will. This lessens the liability to vomiting. After taking ether patients do not want anything to eat for some time. Give the patient a cup of hot water as soon as he can take it after coming out from the ether. After ether taking give milk or beef-tea.

It is necessary to surround the patient with warmth, as Dr. H. A. Hare, quoted by Ringer, has recently shown that prolonged etherization considerably lessens the body temperature. He has reduced the temperature from 8° to 10° F., and in operations he has seen a fall of 4.4° F. in man. Probably other anæsthetics produce the same effect. Some surgeons wrap children in cotton wool, covering not only the body, but also the extremities, before giving the anæsthetic.

Anæsthetics in Midwifery.—Chloroform is to be preferred in labor, because more pleasant to inhale, more prompt in action, and without inflammability. Experience has shown that chloroform is perfectly safe in labor when properly administered. When the labor is of short duration, and not excessively painful, anæsthetics should not be used; on the other hand, when the labor is protracted and the suffering great, they favor the progress of the case and prevent exhaustion and uterine inertia. In labor, chloroform should not be given until complete dilatation of the os has taken place, the head descending and the pains propulsive. It should be inhaled only when the pains come on, and there is no doubt that its entire safety in obstetric practice is due to the intermittent plan of administering it. To relieve

the pain of labor, complete narcosis should not be produced, as cessation of uterine contractions and loss of uterine retractorility may result, leading to a delay in the delivery, retention of the placenta, and even post-partum hemorrhage. The patient should take a full inspiration of the chloroform vapor during the aura of a labor pain, and then bear down. About three deep inspirations are all that she will be able to take during any one pain. Toward the close of the second stage of labor, when the head begins to distend the external parts, the quantity of chloroform may be somewhat increased, but the inhalation should be discontinued when the occiput has passed under the pubic arch. Chloroform is said to favor laceration of the cervix and perineum, but this is not believed.

Instrumental or manual interference with labor may render complete anæsthesia necessary, or it may be needed to aid in the relaxation of a rigid cervix, or to prevent the woman from bearing down when the perinæum is endangered by a too rapid delivery. If puerperal convulsions occur at any stage of labor, the utility of chloroform is unquestionable. If the patient has valvular cardiac disease, this does not contra-indicate anæsthetics as was formerly thought. The shock, when an anæsthetic is not used, is more dangerous than the anæsthetic. Dr. A. A. Smith, of New York, considers organic heart disease as a special indication for the use of chloroform. Give only enough to take away the acuteness of the pain. Give it during the "aura" of a pain for four or five pains, and then withhold it for a pain or two, in these cases of heart disease. When forceps or version are indicated in these heart cases, it is better to use ether, because it then becomes a surgical case, and should be treated as other surgical cases. Never use forceps, or perform version, or craniotomy with the patient only partially under the anæsthetic. Finally, it is generally conceded that no well-authenticated case of death from the use of chloroform in labor has occurred, when the administration was in the hands of a properly qualified medical man (Bartholow and A. A. Smith). Chloroform insensibility may, with care, be maintained for hours and even days.

In administering anæsthetics, the attention should be directed to the state of the pulse, the breathing, the conjunctiva, and the

pupil. If the pulse become quick and weak, or irregular, then the inhalation must be withheld. The breathing often affords an earlier sign of danger than the state of the pulse. If the respirations become shallow, and gradually less frequent, the anæsthetic should be suspended for a time.

The surest signs of safety, and the earliest of danger, are afforded by the state of the conjunctiva and pupil. While irritation of the conjunctiva causes reflex action, and is followed by blinking, there is usually no danger. The pupil is much contracted in the stages of insensibility when no danger is to be apprehended; but on the approach of peril from an overdose of the anæsthetic, the pupil dilates.

It should in every case be made a rule that no operative measures of any kind be allowed until the patient is in the stage of relaxation. It is important to be able to obtain early warning that vomiting during narcosis from anæsthetics is about to supervene. The pupil will, as was pointed out by M. Budin, afford a clue. He found, and my experience confirms his statement, that when the patient is about to vomit the pupils commence gradually to dilate. Efforts at swallowing air are initiated at this time, and the pulse flags slightly. If now the anæsthetic be discontinued, the pupils widely dilate, vomiting occurs, and the patient regains consciousness rapidly. But, on the other hand, if the administrator, aware of the import of these signs, pushes the anæsthetic, the pupils regain the contraction which is normal to the state of relaxation, and vomiting is obviated, while the pulse recovers its force. The gradual dilatation spoken of above must not be confounded with the sudden dilatation which betokens grave danger. In this last case, stertor, shallow breathing, and marked lessening of the pulse-force also occur, together with cyanosis.

It should be borne in mind that operations on the rectum and vagina, even when the patient is quite insensible, generally cause noisy catchy breathing, very much resembling stertorous breathing, often mistaken for it, and sometimes thought to indicate that too much of the anæsthetic has been inhaled; but this is not the case. The true state of things can be made out as follows: The noisy breathing does not occur until the rectum

and vagina are manipulated, and is especially loud and noisy when the finger or an instrument is passed with any force into either orifice.

Are there any conditions of age or health which forbid the use of anæsthetics? Provided due care be observed, it may be given to all persons, irrespective of their condition. It has been given in serious heart disease; in every stage of phthisis; in Bright's disease, cancer, chronic bronchitis; to patients almost dead of exhaustion from loss of blood; to children of a few weeks, and to persons close upon a hundred years old. It is safe to say that any person fit for a severe operation is a fit subject for an anæsthetic, but no one is so free from danger that care in watching its effects can be dispensed with. The cases requiring the greatest vigilance are not the young and delicate, for whom a small dose suffices, but the strong, who inhale deeply, and struggle much (Bartholow, Ringer and Bryant). It requires special study, combined with practice, to administer anæsthetics in the proper manner. In a great many operations, the skillful anæsthetizer is of more importance to the final success of the operation than the operator himself. The experienced administrator takes a great load and responsibility from the operator's mind, reduces death from ether and chloroform to a minimum, and lessens the risks of every operation.

Nitrous Oxide Gas.—Is not much used now as an anæsthetic. It is cumbersome since it requires an extensive apparatus. It is expensive. It was first used by Horace Wells, a dentist of Hartford. It is used at the present day principally in dentistry: It is not feasible for prolonged surgical operations. It causes cyanosis and the pulse becomes increased in force and diminished in frequency. The patient will recover from it in three minutes. Some cases suffer for two or three days after its administration from a disturbance of the nervous system. It may cause sleeplessness and muscular tremor. This gas is both a pleasant and efficient anæsthetic, more rapid and at the same time more transitory in its action than either ether or chloroform. It is especially adapted for the extraction of teeth, opening of abscesses, and similar minor operations. The amount necessary to produce anæsthesia is one to two gallons. It is best administered from

an India-rubber bag, containing about eight gallons of the gas.

Bichloride of Methylene.—Is similar to chloroform and was first proposed as an anæsthetic by Dr. B. W. Richardson. It produces its effects more quickly and may be used in smaller quantity than chloroform. It is agreeable to inhale and causes no heart depression. It is not used in this country at the present day, but is used in England a great deal, especially by Spence Wells and his followers, who pronounce its vapor to be the best known anæsthetic. It does not produce any gastric disturbance. It is considered more dangerous than chloroform or ether.

Bromide of Ethyl.—Is a quick anæsthetic. The odor is not unpleasant, and but little irritation of the air-passages is produced. It is now seldom resorted to as an anæsthetic. It may cause almost instant death by paralyzing the heart. It is a dangerous anæsthetic. Ott states that it destroys life by a toxic action on the respiratory centre.

Chloral as an Anæsthetic.—Dr. Bouchut recommends the use of chloral as an anæsthetic for children. He gives one dose, not exceeding forty-five grains, in children under three years of age. In half an hour the patient is asleep, and in an hour insensible. The anæsthesia lasts from three to six hours and is followed by no unpleasant consequences. Thirty grains may be given without danger, Bouchut says, to children between two and five years of age (Bryant).

Bonwell's Method of Introducing Anæsthesia.—Take a full inspiration and then let the expiration go by installments. This must be done slowly and regularly. By this method, the sensibility will be benumbed so that the rectum may be examined. It may be used in opening an abscess and in pulling teeth. It will relieve many cases of insomnia. This method depends largely on the influence of the mind over the body.

Deaths from the Different Anæsthetics.—Dr. Lyman has collected thirty-seven fatal cases from the inhalation of ether, three hundred and ninety-three, from the administration of chloroform, nine from the employment of bichloride of methylene, four which may be attributed to nitrous oxide gas, and several from the use of ethyl bromide.

CLINICAL INDEX.

ABORTION.—**Chloride of gold** will avert the tendency to habitual abortion. **Corn-utline**, an alkaloid of ergot, will increase uterine action when required in abortion. **Opium** will check uterine action. **Ergot** will restrain the hemorrhage. **All drugs** are dangerous to life when used in sufficient quantity to produce an abortion.

ABSCESS.—**Belladonna**, internally, will prevent the formation of abscesses in the neck and elsewhere, and after the onset of suppuration will check the pain and inflammation. **Belladonna plaster** will subdue the inflammation. **Nitrate of Silver** solution in nitrous ether applied over the inflamed area and adjacent region will abort the inflammation. **Ointments** or **powder** of iodol and iodoform are valuable. **Counter-irritation**, by blisters or tincture of iodine around or adjacent to the abscess, is of great utility. **Caustic potash or soda** is sometimes used to open abscesses with the intention of preventing scarring. **Sulphides**, half grain every few hours, will abort abscess or hasten the formation and extrusion of the pus. **Ether** may be used as a spray to produce local anaesthesia for opening abscesses. **Poultices** will check the formation of pus or assist in maturation. **Fomentations**, with a solution of 20 grs carbonate of ammonium to one pint of boiling water, are of great utility in threatened mammary abscess. **Iodine** solution may be injected into the cavities of large abscesses after evacuation. **Carbolic acid**, boracic acid and permanganate of potassium solutions may be used for washing out cavities of abscesses.

ACIDITY.—**Mineral acids** may be given shortly before meals for acid pyrosis, and after meals for alkaline pyrosis. **Sulphurous acid** may be given for acid fermentation with vomiting of pasty matter. **Acid wine** may be taken during meals. **Alkalies** may be given after meals for immediate relief, but are only palliative. **Nux vomica** in two or three drop doses just before meals is efficient in acidity of pregnancy. **Gray powder** in half grain doses three times daily may be given for acidity with clayey stools. **Carbolic acid** will stop the fermentation and eructation.

ACNE.—**Phosphorus** may be given in acne indurata. **Sulphur** may be used internally. **Sulphur**, dr. j., glycerine, oz. j., rose water, *Osa*, applied to the face, as a lotion, twice daily will be effective in acne of young women with disordered menstruation. **Corrosive sublimate**, one part; alcohol, enough to dissolve it, water, 100 parts. A teaspoonful of this may be added to a quarter of a pint of water and the face sponged with it night and morning. **Arsenic** (Fowler's sol.) in two drop doses, three times daily, will prevent bromic acne. **Bismuth** may be dusted on the face when there are heat and redness. **Sublimed sulphur** applied as a powder to the eruption is one of the best applications. **Alkaline lotions**, as liquor potassa dr. j. and aque rose oz. iv., applied with a soft sponge twice daily are useful when the skin is greasy and sebaceous follicles full. **Hot sponging** is effective in acne indurata.

ADYNAMIA. **Alcohol** in the form of whisky, brandy or wine of good body, in teaspoonful doses after meals is most useful. Give brandy when bowels are relaxed, and whisky when there is constipation. **Aliment**, as beef, milk and cod-liver oil. **Bitters**, as quassia, gentian and calumba. **Quinine** in gr ss-gr j. doses t. i. d. **Iron** may be given to stimulate digestion and promote blood formation. **Nux vomica tincture** in doses of three to five drops, t. i. d. is beneficial.

AFTER-PAINS.—**Chloral** in large doses is effective. **Camphor** (ten grains in a mixture with a little morphine (one eighth of a grain), is a very efficacious remedy. **Morphine** (gr. $\frac{1}{4}$) and **atropine** (gr. $\frac{1}{10}$), hypodermically, will give prompt relief.

AGUE.—**Quinine** is by far the best remedy we possess for ague. In mild forms small doses several times daily and in malignant forms large doses continued

for a long time. **Arsenic**, in three to ten drop doses of Fowler's solution is the best remedy except quinine. **Nitro-glycerine** may avert the cold stage.

ALBUMINURIA.—The milk-cure, especially butter-milk. **Basham's mixture**, ten spoonful t. i. d., is of service in anæmic patients. **Arsenic**, three drops t. i. d. of Fowler's sol. after meals for kidney changes. **Gallic acid** has the power to restrain the waste of albumen in cases of acute albuminuria. It may be given as follows: *Acidi gallici*, dr. j., *acidi sulphurici dil.* dr. ss., *tinct. lupuli* dr. infus. *lupuli* oz. vj., m. Sig.: A tablespoonful three times daily. **Gold and sodium chloride**, in the dose of $\frac{1}{10}$ - $\frac{1}{20}$ grain, t. i. d. is of the highest utility in chronic albuminuria. **Nitro-glycerine** ($\frac{1}{100}$ gr.) daily, increased gradually will relieve the high arterial tension in acute and chronic Bright's disease. **Digitalis** may be used when the quantity of urine is much diminished. **Pilocarpine** may be used cautiously.

ALCOHOLISM.—**Bromides** in drachm doses may be given for the "horrors of **Arsenic**, in drop doses before breakfast for the morning vomiting. **Cimicifuga** for the dyspepsia of drunkards. **Morphine** with tonics before meals for pain, nausea and want of appetite. **Capiscum** and **nux vomica** may be given as stomachic tonics.

AMAUROSIS.—**Strychnine** will cure amaurosis of a functional kind, from lead, tobacco and alcohol.

AMENORRHOEA.—**Aconite tincture** in drop-doses every half hour, for sudden suppression of menses. **Aloes and iron** may be given when due to anæmia and torpor. **Apiol** in a dose of fifteen grains daily for five days before the expected period, is effective in amenorrhœa due to anæmia and torpor of the ovaries and uterus. **Hydropiper** in thirty minim doses of the fluid extract four times daily for a week before the menses ought to appear. **Chloride of gold and sodium** in $\frac{1}{2}$ gr. dose thrice daily when dependent on torpor of the ovaries. **Hot mustard sitz-baths** for five days before the period. **Potassium permanganate**, one grain thrice daily for a week before the period. It may restore it after two years delay.

ANÆMIA.—**Cold sponging** is useful in anæmia. **Hypophosphites of lime and soda** a grain thrice daily. **Phosphate of lime**, a grain thrice daily, in anæmia of growing persons, and of women weakened by rapid child-bearing or excessive menstruation. **Trinitrin** in doses of one minim of the one per cent. solution gradually increased to many will cure many cases of anæmia. **Quinine** in doses of one grain three times daily, for badly fed, pale town-livers. **Iron** in all forms of anæmia. **Arsenic** is effective in proper doses. **Wines** with good body. **Galvanism** to stimulate the functions of organic life.

ANÆSTHESIA.—**Galvanism** to the spine and affected parts. The electric brush is useful in anæsthesia. **Strychnine**, hypodermically, $\frac{1}{30}$ gr. daily increased gradually.

ANEURISM.—**Potassium iodide**, in full doses relieves the pain and promotes coagulation of the blood in the sac. A low diet with absolute repose in the recumbent posture. **Barium chloride** one-fifth of a grain, three times a day for four weeks, then two-fifths may be given for months. **Aconite** slows the circulation and thus facilitates coagulation in the sac. **Ergot**, especially **ergotin** hypodermically has been very effective. **Galvano-puncture** has but rarely succeeded.

ANGINA PECTORIS.—**Arsenic** (Fowler's solution) in full doses, is very efficient to prevent attacks given during the intervals. **Amyl nitrite**, two to five drops by inhalation affords prompt relief in cases characterized by elevated arterial tension. **Nitro-glycerine** one minim of a one per cent. sol. at stated intervals is superior to amyl. **Ether**, in small quantity by inhalation, may abort a mild attack, hypodermically in the worst cases. **Nitrite of sodium**, one grain several times daily. **Morphia**, gr. $\frac{1}{4}$, may be given hypodermically for the pain.

ANTHRAX.—**Carbolic acid** applied locally.

APHONIA.—**Atropine** ($\frac{1}{100}$ gr.) morning and evening will remove aphonia due to fatigue of vocal cords. It will also cure **hysterical aphonia**. **Nitric acid** in ten minim doses of the dilute, is effective in the hoarseness of singers and when aphonia is reflex. **Electricity** (galvanism) usually cures when due to paresis of the vocal cord.

APHTHÆ.—**Bismuth subnitrate** may be applied to ulcers. **Potassium chlorate** (gr. x. to oz. j.) may be used locally. **Iodoform** dusted on is an excellent topical.

cal application. **Quinine** in tonic doses (gr. ss. to gr. j) is highly useful. **Carbolic acid** (pure) may be applied to the ulcers, as an anæsthetic and alterant. **Alum** may be applied dry a few times a day to aphthous ulcers which will not heal. **Borax** with honey, or as glycerine of borax may be applied to ulcer.

APOPLEXY. Croton oil in one-third minim dose, may be given every hour as a purgative. **Venesection or leeches**, when the blood pressure is high and hemorrhage threatened or proceeding.

ASCARIDES. Quassia, an infusion, as a rectal injection, is one of the most effective agents for the destruction of thread worms. **Carbolic acid** is an efficient but unsafe parasiticide when injected into the rectum. **Iron**, ten drops of the syrup of the iodide, three times daily by the stomach to prevent reproduction and dr. j of the tinct. to Oj of water by rectal injection. **Santonin** in dose of five grains for adult at night with or without calomel and a laxative in the morning.

ASCITES.—**Copaiba resin** may be used as in the following: Res. copaiba dr. ij, alcohol dr. v, spirit chloroformi dr. j, mucil. acaciae oz. ij, aqua ad. oz. xij.—M. Sig. A tablespoonful t. i. d. **Pilocarpine** very serviceable when given to produce free diaphoresis. **Jalap** compound powder in teaspoonful doses taken in the early morning. **Elatarium** in dose of gr. ½-gr. 1, must be given cautiously. Milk diet or dry diet will aid remedies.

ASTHMA. Oxygen, pure or diluted by inhalation. **Amyl nitrite** four or five drops by inhalation. **Nitro-glycerine** (gr. ʒss) by the stomach. **Arsenic** one drop three times daily to prevent. **Alum** ten grains powdered and placed on the tongue is said to arrest a paroxysm. **Bromides**, in spasmodic asthma, may be given as follows. Potassii bromidi oz. j, potassii iodidi oz. ss, aqua oz. iv. M. Sig. A teaspoonful in water every half hour or hour. **Chloral** in twenty grain doses may arrest the paroxysm but danger of the chloral habit. **Chloroform** by inhalation relieves. **Ether** by inhalation is safer than chloroform. **Atropine** gr. ʒ at bed time may prevent paroxysm. **Morphine** (gr. ʒ) and atropine (gr. ʒ) hypodermically are the best agents to cut short a paroxysm. **Potassium iodide** in full doses succeeds remarkably in some cases. **Quinine** may be given during the intervals in grain doses thrice daily. **Strychnine** used persistently may lessen the number of attacks. **Galvanization** of the pneumogastric and cervical sympathetic relieves the spasmodic difficulty of breathing and sometimes effects a cure, and **faradization** of the chest muscles has lately been reported successful in effecting a cure. Coffee, a very strong infusion, is often useful in a paroxysm. **Lobelia tincture** in ten drop doses every ten minutes till dyspnoea gives way. **Stramonium**, gr. xx of the dried leaves may be smoked. Tobacco smoked sometimes gives relief.

BALDNESS.—**Pilocarpine** may be used locally in the following formula: Extracti pilocarpin oz. j, tincture cantharidis oz. ss., linimenti saponis oz. iss.—M. Sig.: To be applied to scalp daily.

BED-SORES.—**Alcohol** in form of brandy to harden skin of parts exposed to pressure. **Alum** with tinct. of camphor and whites of eggs is a good topical application. **Resorcin** in form of powder may be dusted on. **Copaiba** and **castor oil** equal parts, locally. **Naphthol** as an ointment with vaseline is said to be the most efficient of all. **Iodoform** dusted over sores. **Charcoal** sprinkled over the black slough which is then covered with a poultice. **Glycerine** rubbed over the part exposed to pressure after washing morning and evening is one of the best preventives of bed-sores. **Silver nitrate** gr. xx. to oz. j, painted on the unbroken skin as soon as it becomes red to prevent bed-sores.

BILIOUSNESS.—**Mineral acids** before meals in acid indigestion. Hydrochloric acid and pepsin after meals in atonic dyspepsia. **Sodium phosphate** in teaspoonful doses thrice daily for a long time. **Calomel** and **blue pill** in small quantity as laxative merely. **Ammonium chloride** in five grain doses three times daily. **Tincture of nuxvomica**, gtt. v., t. i. d. for three weeks.

BITES. **Ammonia**, weak solutions, in bites of insects to neutralize the formic acid. The strong aqua ammonia should be at once applied to the bite of venomous serpents and of rabid animals. **Potassium permanganate**, a strong solution applied locally. **Alcohol** stimulants internally.

BLADDER, CATARRH OF.—**Alkalies** after meals, when the urine is acid. **Benzoate of ammonia** in gr. v. to gr. xx thrice daily may be given when the urine is alkaline and loaded with phosphates. **Copaiba**, **cubebs** and **juniper** are useful. **Cantharides**, tinct. gtt. iij. to gtt. v. very useful.

BLADDER, IRRITABILITY OF.—*Belladonna tinct.* in ten minim doses until physiological effects. *Alkalies* when urine is acid. *Benzoate of ammonia* when urine is alkaline. *Tinct. cantharides* sometimes succeeds in irritable bladder of women.

BOILS.—*Arsenic*, Fowler's solution, in three drop doses after meals for a long time when there is a succession of boils. *Nitrate of silver* gr. xx.-xxx. dissolved in nitrous ether, and painted on early will abort boils. *Sulphide of calcium* half grain three times daily will hasten maturation and prevent the formation of fresh boils. No use in the boils of diabetes. *Collodion* may be applied in the papular or pustular stage. *Belladonna* with glycerine locally to allay pain. *Counter-irritation* by blisters or iodine around the boil. *Menthol* forty per cent. solution locally. *Poultices* assist maturation and allay pain. They may be smeared over with *belladonna* or opium.

BRAIN, DISEASES OF.—*Bromide of potassium* in gr. xxx. doses at bed-hour, when over-taxed from study, or over-application to business. *Phosphorus* $\frac{1}{10}$ to $\frac{1}{20}$ grain thrice daily for several months in cerebral softening and over-taxation.

BREASTS, INFLAMMATION OF—*Belladonna*, especially as liniment to check secretion of milk when inflammation is imminent. When inflammation has set in, continuous application of *belladonna* for twenty-hours often arrests it. It is also useful when an abscess has formed. *Digitals* as an infusion locally.

BREATH, FOUL.—*Camphor* is a common ingredient of tooth powder and is a corrective of foul breath. *Chlorine-water* properly diluted. *Carbolic acid* in dilute solution as a mouth-wash and by the stomach. *Potassium permanganate* gr. ij. to oz. j. of rose-water as a mouth-wash. *Tinct. of benzoin* internally and as mouth-wash.

BRIGHT'S DISEASE.—*Milk-cure* especially an exclusive skim-milk diet, or a diet composed largely of milk, has been very successful. *Water* and large draughts of weak alkaline waters. *Bitartrate of potassæ* as lemonade, drunk freely as a diuretic. *Digitals* the infusion for the dropsy. *Potassium iodide* in the chronic cases. *Iron* to relieve the anæmia. *Pilocarpus* highly useful in many cases of uræmia. *Nitro-glycerine* has proved highly useful when there is increased vascular tension. *Cod-liver oil* in the chronic. *Tannin* in chronic Bright's to lessen albumen.

BRONCHITIS.—*Aconite tinct.* in small doses frequently in the acute form. *Carbonate of ammonia* in gr. v. doses every three hours if the secretion is viscid. *Morphine* or *Dover's powder* with quinine may abort an acute attack if given early. *Squills*, the compound syrup with *paregoric* is useful. *Terebene* may be given for the cough. *Cod-liver oil* may be given in the chronic form. *Iron* as a tonic. *Strychnine* is the best remedy to check the reflex vomiting. *Acids* to lessen the secretion in the chronic. *Tar*, two grains in pill every three or four hours in chronic paroxysmal winter cough. *Wine of ipecac* used as a spray to the pharynx is invaluable in many cases of bronchial asthma and winter cough.

BRUISES.—*Capsicum*, a strong tincture applied with gum is said to act like a charm on discolored bruises. *Hamamelis* applied on lint or cotton-wool. *Sulphurous acid* a solution constantly applied.

BUBO.—*Iodine* applied to produce vesication round a bubo relieves the inflammation. *Nitric acid* may be applied to indolent and broken bubo.

BURNS AND SCALDS.—*Carbolic acid*, a one per cent. solution on lint frequently renewed relieves pain. *Cocaine* as a lotion painted on scalds relieves the pain. *Collodion* painted over slight burns subdues inflammation. *Lime* in the form of lime-water combined with oil, enjoys a high reputation. *Carbonate of soda* in saturated sol. to relieve pain. *Boracic acid* most useful in Mr. Lister's hands. *Carbonate of lead* and linseed oil, white lead paint, is an excellent application to burns.

CALCULI, BILIARY.—*Aliment*, as starches, sweets, and especially fats should be avoided. *Alkaline mineral waters* are highly useful. *Sodium phosphate*, dr. j. t. i. d. for three months. *Turpentine* and ether equal parts, gtt. x. t. i. d. for the solution and cure of biliary calculi.

CALCULI, RENAL.—*Nitric acid* very dilute as an injection for phosphatic calculi. *Alkalies* to dissolve uric acid calculi. *Alkaline mineral waters* as vichy, Bethesda, etc.

CANCER.—Arsenic relieves the pain and retards the growth of cancer of the stomach and also of epithelioma. Bismuth relieves the vomiting in cancer of the stomach. Carbollic acid, pure, as an anæsthetic before applying caustics. Arsenious acid, pure, may be used to set up active inflammation in epithelioma. Carbonic acid may be injected up the vagina in cancer of the uterus to relieve the pain. Chloral in ten grain doses t. i. d. has relieved most severe pain of cancer. Chloroform as a vapor to raw, painful surface. Conium may be applied as poultice to ease pain. Glycerine of carbollic acid and glycerine of tannin combined checks the discharge and stench of uterine cancer. Iodoform applied locally relieves the pain of cancerous sores. Morphia dissolved in glycerine and spread on lint, is very useful where there is much pain. Opium is also used in cancer of the stomach. Poultices of starch applied cold soothe open cancers. Warm enemata relieve the pain and straining in intestinal cancer.

CANCERUM ORIS.—Arsenic in medicinal doses useful. Nitric acid applied to the surface.

CANKERY TASTE.—Podophyllin small doses $\frac{1}{10}$ grain night and morning. Purgatives as mercury and podophyllin, are best. Water, half a glass of pure cold, daily, half hour before breakfast.

CARBUNCLE.—Arnica as an ointment on plaster. Belladonna with equal part of glycerine as a local application to allay pain. Carbollic acid and glycerine 1 to 4 on lint to sinuses. Iodine applied round the carbuncle reduces inflammation. Menthol, ten to fifty per cent. in ether or alcohol, painted on several times daily. Opium, an extract of the consistence of treacle applied three or four times a day.

CARIES.—Phosphate and carbonate of lime to furnish needed materials. Cod-liver oil to promote constructive metamorphosis.

CATARRH, ACUTE—COMMON COLD.—Aconite tinct. and belladonna tinct., equal parts, two drops of the mixture every half hour for six or eight hours and then every two hours. Quinine gr. xv. and morphine gr. ss. may at the outset, abort an attack. Dover's powder in full dose of gr. x-xv. at the inception may arrest the attack. Iodide of potassium gr. v, tartar emetic gr. ss., syrup of orange peel oz. j., water oz. iij.—M. Sig.: Teaspoonful doses hourly for children. Warm foot-bath before going to bed. Turkish bath is useful in chronic catarrh. Carbollic acid is of great value by inhalation of vapor and spray.

CATARRH, CHRONIC NASAL.—Alum in powder, may be insufflated. Iodoform and tannin may also be applied by insufflation. Iodine in vapor may be inhaled. Ethyl iodide five to twenty drops put on a handkerchief inhaled every three hours. Sanguinaria ten drops of the tincture t. i. d., and the local application of the powder. Cubebs in powder by insufflation.

CATCH IN THE BREATH.—Cold sponging night and morning will improve or even cure this curious complaint in infants.

CHANCERE.—Eucalyptol with Iodoform may be applied to both kinds of sores. Iodoform may be dusted over soft chancres. Iodol dusted over sore is effective. Nitric acid applied by means of a glass rod or pine stick to the chancre is one of the most valuable caustics. Acid nitrate of mercury is the most efficient escharotic for the destruction of chancre which we possess. Carbollic acid may be applied pure in mild cases. Chlorate of potassium in powder is also an excellent local application. Iodide of iron internally is valuable.

CHANGE OF LIFE.—Actæa is one of the most useful remedies for many of the distressing symptoms occurring at the change of life. Ammonia in the form of Raspail's sedative lotion to be applied to the painful part of the head in the headaches of this period. Bromide of potassium in gr. xx.-xxx. doses at bedtime, for the despondency with sleeplessness and irritability often also with heats, flushings and perspirations. Calabar bean for the flatulence of this period. Change of air and scene where other treatment fails. Eucalyptol for various symptoms as palpitations, flushings and flatulence. Iron the tincture of the chloride gtt. xv. t. i. d. in fluttering of the heart with fullness of the head, heat and weight on the vertex, frequent flushings and hot and cold perspirations. Nux vomica tinct. gtt. ij. and opium tinct. gtt. ij. combined t. i. d. are most useful.

CHAPS.—Collodion is sometimes used but for chapped hands and lips glycerine of starch, arnica cerate or eau de cologne and glycerine better. Compound

tinct. of benzoin and glycerine, equal parts, is the best remedy for chapped hands and lips and fissured nipples. Sulphurous acid and glycerine, equal parts, combined are most useful for chapped nipples. Vaseline and petroleum are effective.

CHEST PAINS.—Iodine, as an ointment, in muscular pains of the chest. Bella donna is better when the pain is in the skin.

CHILBLAINS.—Sulphurous acid is an efficient application to chilblains, applied as follows: Acidi sulphurosi dr. iij., glycerine dr. j., aquæ oz. iss.—M. Benzoin tincture applied locally is the best. Turpentine is efficient. Balsam of Peru in ointment for broken chilblains. Capsicum tinct. painted over unbroken chilblains. Iodine tinct. or ointment is better painted over the part. Carbolic acid may be used as follows: Acidi carbol. dr. j., tinct. iodi dr. ij aciditannici dr. ij, cerat. simplicis oz. iv.—M. Sig.: Ointment.

CHLOROSIS.—Arsenic, gtt. iij. of Fowler's sol. t. i. d. after meals. Hypophosphites of lime or soda may be given in grain doses, t. i. d. for some time. Iron reduced gr. v., t. i. d. gives excellent results. Iron may be given with manganese or arsenic or with aloes if constipation exists. Water of Iron spring most beneficial. Massage with inunctions of oil. Nux vomica may be combined with iron. Pepsin and pancreatin aid digestion. Galvanism and faradism to the central nervous system.

CHOKING.—Bromide of potassium gr. iij.-v. t. i. d. to a child six years old, which from the time of his birth, can swallow solids with ease, yet is choked every time he tries to drink.

CHOLERA, ASIATICA.—Morphia, gr. $\frac{1}{8}$ - $\frac{1}{4}$, hypodermically, of the greatest value even in the stage of collapse. Mercury in form of gray powder, gr. $\frac{1}{4}$ hourly in the stage of collapse. A starch injection with a minute quantity of laudanum assist the gray powder. Arsenic, Fowler's sol. with opium of service. Camphor gtt. iv.-vj. of the strong spirit, every ten minutes at first then hourly. Chloral combined with morphine as follows: Chloral hydratis dr. iij., morph. sulph. gr. iv., aquæ laur-cerasi oz. j.—M. Sig.: Fifteen to thirty minims. Chloroform a few drops frequently to stop vomiting. Calomel, minute doses (gr. $\frac{1}{10}$) every hour will sometimes stop vomiting. Alcohol in form of iced brandy to stop vomiting. Acetate of lead with opium and camphor as follows: Plumbi acetat. grs. xxiv., pulv. opii grs. xij., pulv. camphoræ dr. ss., sacch. alb. q. s., Ft. pulv. no. xij. Sig.: One powder every hour. Chlorodyne very effective.

CHOLERA MORBUS.—Morphine and atropine (gr. $\frac{1}{4}$ and gr. 1-120) hypodermically is the most efficient remedy. Chloral with morphine if cramps occur. Carbolic acid and bismuth as follows: Acidi carbolici grs. iv., bismuthi subnitrat. dr. ij., mucil. acaciæ oz. j., aquæ menth. pip. oz. iij.—M. Sig.: A tablespoonful every three hours.

CHOLERA INFANTUM.—Carbolic acid is very effective. Bismuth subnitrate, gr. iij. every two hours. Calomel in minute doses arrests vomiting. Oxide of zinc given in the following formula: Bismuthi subnitrat dr. iss., pepsinæ sacch. dr. ss., zinci oxidi grs. vj-grs. xij.—M. Ft. pulv. no. xij. Sig.: One powder every four to six hours. Brandy is serviceable.

CHORDEE.—Camphor, ten to twenty grains very successful. Potassium bromide dr. j., every four hours. Cantharides tinct. one drop thrice daily. Aconite tinct. one drop each hour. Morphine gr. $\frac{1}{4}$ and atropine gr. 1-150, hypodermically will most certainly relieve. Tartar emetic will relieve if carried to nausea. Tobacco wine a few drops at bed-hour.

CHOREA.—Cold effusions and cold bath. Cod-liver oil when the nutrition is poor. Iron may be given for the anæmia. Arsenic, Fowler's sol. gtt. iij. to x. t. i. d. very successful. Chloroform inhalation t. i. d. in severe cases. Strychnine in increasing doses until stiffness of the muscles of the neck and spasmodic jerkings. Hyoscyamus gr. 1-50 daily. Morphine in large doses. Chloral at night is highly useful. Conium is said to be good. Sulphate of zinc pushed to nausea. Galvanism to the spine.

CIRRHOISIS.—Iodide of sodium or ammonium in small doses t. i. d. before meals in first stage. Phosphate of sodium, dr. j., t. i. d. for a long time. Gold and sodium chloride in doses of gr. 1-10-1-20 t. i. d. seem to have curative power if given in time. Arsenic, Fowler's sol. gtt. v. t. i. d. retards or arrests the overgrowth of connective tissue.

- DIABETES INSIPIDUS.**—Ergot in large doses is the best remedy. Iodide of potassium has cured cases of syphilitic origin.
- DIARRHŒA.**—Bismuth subnitrate in dr. ss. doses t. i. d. Chalk-milk or opium in diarrhœa of children. Calomel in small doses. Castor oil in early stage to carry away the irritant. Camphor with or without opium in summer diarrhœa.
- DROPSY.**—Digitalis infusion in tablespoonful doses t. i. d. Saline purgatives in general dropsy. Iodide of potassium in some cases of Bright's disease. Diet and milk-cure. Nitro-glycerine in gradually increasing doses in high vascular tension.
- DYSENTERY.**—Salol is highly efficient in arresting intestinal fermentation. Fowler's sol. with opium.
- DYSMENORRHŒA.**—Hot sitz-bath two or three times daily. Aconite in the congestive form. Amyl nitrite by inhalation, affords quick relief. Gelsemium and apiol give relief in the neuralgic form. Ergot gives relief. Morphine and atropine give prompt relief.
- DYSPEPSIA.**—Milk-cure. Pepsin, Inguvin and pancreatine assist digestion in atonic dyspepsia. Muriatic acid after meals. Alkalies may be given after meals. Simple bitters may be given with acids. Fowler's sol. drops relieve irritative dyspepsia. Nuxvomica and wild cherry useful in atonic dyspepsia. Alcohol in the form of wine in small quantity before meals.
- EAR-ACHE.**—Morphine sulphatis grs. iv. aqua destil. oz. j.—M. Sig: instil into external meatus with the solution. Cocaine, four per cent solution, if used in the ear is the most effective remedy. Water as hot as can be borne instilled into external meatus. Counter-irritation by blister behind the ear often cures.
- ECLAMPSIA.**—Morphine subcutaneously in uramic form. Chloroform by inhalation. Chloral grs. xx every two hours. Potassium bromide in dr. ss. every two hours. Pilocarpine in small dose must be watched. Veratrum viride dr. ss. of the fluid extract every fifteen minutes until nausea or vomiting ensue.
- ECTHYMA.**—Quinia in full doses often effects a cure. Cod-liver oil internally and externally. Iodoform, lodol and naphthol useful topically.
- ECZEMA.**—Arsenic, Fowler's sol. gtt. iij.-v t. i. d. after meals in chronic cases. Bismuth subnitrate as a dusting powder to surface. Salicylate in powder to eruption. Tannin in powder dusted over. Boracic acid mixed with starch as a dusting powder. Atropine internally in acute cases. Electricity (galvanism) in chronic cases. Iodoform and vaseline in dry stage. Milk oleate locally. Lime water and glycerine equal parts locally. Oxide of zinc ointment sometimes beneficial.
- EMPHYEMA.**—Carbolic acid, a weak sol. to be injected after evacuation of pus. Solution to be injected after tapping to prevent reaccumulation of pus. Chlorine solution for washing out the cavity.
- ENDOCARDITIS.**—Quinine, a 20 to 40 grain dose at the onset to check the inflammation. Morphine gr. ¼ to gr. ½, hypodermically, will sometimes abort the inflammation. Salicylic acid may be given in the rheumatic form. Potassium salts liquefy the exudation.
- ENDOMETRITIS.**—Undiluted carbolic acid is an efficient application to the cervix uteri, chronic endo cervicitis and endo-metritis. It may be applied undiluted without risk to the mucous membrane of the uterine cavity. The cotton-wrapped probe, after preliminary dilatation of the canal. There is probably no better means of treating uterine catarrh. Iodoform and salicylic acid applied locally. Chronic acid (grs. xv. to dr. j. of hot water) has been injected into the uterine cavity with success.
- ENERGY, LACK OF.**—The Turkish bath, like sea air and sea-bathing, is a tonic in this condition.
- EPIDIDYMITIS.**—The oleates of mercury and morphia ten to thirty drops are sufficient for one application. It should be applied twice daily for five days at night only for five days, and afterwards every other day until a cure is obtained.
- EPILEPSY.**—Potassium bromide grs. xv.-xxx t. i. d. for the diurnal attacks. Chloral full dose at bed-time may prevent nocturnal attacks. Iron tonic and anaemia. Amyl nitrite inhaled when the aura is felt may prevent the attack.

Nitro-glycerine may prevent an attack if given in time **Nitrite of sodium** in grs. xx. doses t. i. d.

EPISTAXIS.—**Aconite tinct.** in small and frequent doses check nose-bleed in children and plethoric people **Alum** in powder insufflated or a solution injected. **Cocaine** four per cent sol applied locally to nasal mucous membrane **Tannin** in solution locally applied. **Compression** of the facial artery **Spinal hot water bag** and a hot foot bath. **Ergot** in grs. ij-v, hypodermically, to contract blood vessels

EPITHELIOMA.—**Carbolic acid** applied undiluted to the cancerous sore and a syringe of a five per cent sol injected daily beneath the new formation **Salicylic acid** (pure) may be applied in powder **Boracic acid** finely levigated applied in powder **Dried sulphate of zinc** may be dusted over the affected surface. **Chloride of zinc** one part and flour four parts may be dusted over the surface **Potassium chlorate** (powdered) is thickly applied over the sore, and is said to allay pain and remove fetor

ERUCTIONS, OFFENSIVE.—**Mineral acids** to correct the oxaluria on which the eruptions depend.

ERYSIPELAS.—**Aconite tinct.** one drop hourly until fever is reduced in facial erysipelas **Belladonna tinct.** five drops every two hours along with the aconite This has a real curative power **Quinine** in full doses. **Tinct. chloride of iron** in large doses. **Carbolic acid** (one per cent sol) applied to surface frequently on lint. **Iodine tinct** paint affected surface and surrounding skin to prevent spreading. **Nitrate of silver** eighty grains to dr. iv of distilled water, to be applied two or three to the inflamed surface and two inches beyond

ERYTHEMA.—**Bismuth subnitrate** dusted over surface allays irritation. **Hydrochloric acid** diluted gtt. x. internally t. i. d **Zinc, alum and lead** as lotions. **Quinine** in tonic doses for some time.

EXOPHTHALMIC GOITRE.—**Iron** for the existing anæmia. **Digitals** good in some cases. **Ergot** of service to raise arterial tension and slow the heart. **Galvanism** in uncomplicated cases is decidedly curative.

FAINTINGS.—**Cold water** sprinkled on the face **Ammonia** to the nostrils, **Brandy** for feeble heart

FEET, FETOR OF. **Salicylic acid** in powder freely dusted over the feet and stocking is very effective **Sodium bicarbonate** a saturated solution locally **Potassium permanganate** in solution will remove fetor temporarily.

FELON. **Nitrate of silver** a strong solution in nitrous ether applied over the part may abort it. **Carbolic acid** to benumb the surface during incision

FEVER. **Cold-baths.** **Tinct. aconite**, one drop, **tinct. belladonna** two drops every hour until fever is reduced. **Antipyrine** grs. v. every two hours until three doses have been taken **Quinine** in large doses **Phenacetine** in grs. v doses

FISSURE OF THE ANUS.—**Forcible dilatation** of the sphincter under an anæsthetic. **Iodoform** dusted well over the fissure. **Cocaine** to allay irritability **Hydrastis** the fluid extract applied undiluted **Bromide of potassium** in five parts of glycerine locally

FISSURE OF THE NIPPLES.—**Collodion** applied to close fissure **Lime water** as a lotion. A solution of iron subsulphate and glycerine applied with a brush to fissure. **Tannin** in powder to part **Tinct. of benzoin** with glycerine.

FLATULENCE.—**Avoid sugar, starchy food and tea.** **Asafœtida** one drachm of the tinct to oz. iv of water, a tablespoonful for adults **Bismuth and charcoal** equal parts, ten grain doses **Chloroform** in drop doses every fifteen minutes. A tumbler of hot water between meals **Camphor** as follows: **Aque camphoræ** oz. ij., **tinct lavender comp** (Z. j) —M. Sig. A tablespoonful every hour **Turpentine** gtt. iiij.-v. on lump of sugar.

FLUSHING HEATS.—**Nitrite of amyl** $\frac{1}{2}$ of a drop in five drops of rectified spirit t. i. d **Nuxvomica tinct.** and **tinct of opium**, equal parts, four drops t. i. d **Bromide of potassium** fifteen grains t. i. d.

FRECKLES. **Biborate of soda**, a saturated solution, is a safe and often successful lotion. The following lotion is useful: **Potass carbonatis** dr. iij., **sodii chloridi** dr. ij, **aque rosæ** oz. viij., **aque auranti flor** oz. ij —M. Sig. Lotion.

GALL-STONES.—(See Biliary Calculi).

GANGRENE.—**Antiseptics**, as carbolic acid, salicylic acid, resorcin, salol, iodof and thymol are most effective.

GASTRALGIA.—**Arsenic** one or two drops t. i. d. of Fowler's solution, is the m generally effective of all remedies. **Chloroform** two to five minims dropped sugar and swallowed will relieve. **Alum** is useful in the cases with acidity and pyrosis. **Inject**ions of water under the skin over the epigastrium affords m relief. **Bismuth**, creasote and glycerine are useful. **Nux vomica** may rem the morbid state on which the pain depends. **Morphine** hypodermically e the pain at once. **Galvanism** has been successful. Diet is of great importan

GASTRIC CATARRH.—**Arsenic** is the most important remedy. The milk cure is fective. The bitters, as calumba, gentian, nux vomica and cinchona infus are useful. **Bismuth** and **alum** are of service.

GASTRIC ULCER.—**Bismuth** allays pain and arrests vomiting. **Fowler's solut** in drop doses lessens pain and vomiting. **Morphine** and **atropine** arrest p and vomiting, even in very minute quantity. Milk-cure may be tried. **Rec** alimentation may be necessary. **Silver nitrate** in solution promotes heal and relieves pain.

GLEET.—**Blisters** to the perinæum are very beneficial. **Iron** when the subject anæmic. **Turpentine**, juniper and cantharides tinct. may be tried. **Bismu** half an ounce, glycerine half ounce and water three ounces, as an inj tion t. i. d.

GOITRE.—**Electrolysis** has succeeded in some cases. **Red iodide of mercury oin** ment rubbed in, in the sunshine. Tinct. iodine injected into the gland appli locally. Iodide of potassium in ten grain doses internally.

GONORRHOEA.—Avoid all alcoholic drinks. **Alkalies** to render urine neutra **Aconite** tinct. one drop each hour in acute stage. **Cantharides** drop dos t. i. d. **Bismuth** with fluid ext. of hydraatia is one of the best injectio **Chloride of zinc** two grains to a pint of water injected hourly often remove the disease in twenty-four to forty-eight hours. **Zinc sulphate** two grains to a ounce of water injected three to six times daily.

GUMS, AFFECTIONS OF.—**Glycerite** of tannin for spongy and bleeding gum **Alum** for the same condition as above. **Carbolic acid** when fetor is presen **Benzoin** tinct. may be applied to the gums.

HÆMATEMESIS.—**Iron** subsulphate and pernitrate solutions, one or two drop well diluted with ice-water and frequently. **Alum** especially useful in passiv **Lead acetate** may be used in all conditions. **Ergot** may be used in doses of hal fluid drachm. **Ice** to be sucked and small pieces to be swallowed. **Tann** may be used in solution. **Turpentine** in five to ten drop doses frequently.

HÆMATURIA.—**Camphor** two to five grains when bloody urine is due to drug **Cannabias indica** is said to relieve this condition. **Ergot** may be given by th stomach. **Gallic acid** is one of the most useful remedies. **Quinine** is effectiv in malarial hæmaturia. **Turpentine** in very small doses.

HÆMOPTYSIS. Common salt half teaspoonful taken dry and repeated till naus is induced. **Digitals infusion** in large doses useful. **Ergot** thirty to fort minims every two or three hours. **Ice** to be sucked. **Morphia** in small dos hypodermically. **Gallic acid** and **ergot** by the stomach. **Spinal hot water ba** to cervical and upper vertebrae.

HÆMORRHAGE, CEREBRAL.—**Venesection** or leeches when blood pressure high and hæmorrhage threatened or proceeding. **Purgatives** may be giv **Ergotine**, hypodermically, in two to five grain doses.

HÆMORRHAGE, INTESTINAL.—**Ice** should be applied to the abdomen. **Ergot**ir two to five grains subcutaneously. **Opium** (laudanum) in doses of thirt minims to quiet intestinal movements. **Turpentine** in small doses frequentl. **Sulphuric acid** diluted in ten drop doses. **Tannic acid** in solution and oth astringents.

HÆMORRHAGE, UTERINE.—**Ergot**, fluid extract, in teaspoonful doses. **Ipec** carried to nausea is highly effective. **Turpentine** one drachm every thr hours. **Monse**l's solution diluted, injected. **Tincture opium** in one drach dose with brandy. **Ice** or hot water in uterine cavity. **Acid sulphuric** dilute small doses frequently.

HÆMORRHOIDS.—**Nitric acid** half to one ounce in half pint of water, as a lotio to bleeding piles. **Bromide potassium** one part to five parts of glycerine l cally to ease pain. **Potassium chlorate** half to one ounce of a saturated solutio

with ten drops of laudanum as injection to inflamed piles. **Carbolic acid** six grains, cocaine ten grains and glycerine one drachm. M. Sig., Inject ten minims into the tumor.

HAY-FEVER. Quinine is useful at the onset as a spray locally and later in tonic doses. **Aconite** is efficacious in the early stage. **Ethyl iodide** by inhalation of service. **Morphine** is most beneficial in any stage. **Cocaine** to the nose, as a spray, is a very effective remedy. **Potassium iodide** ten grains at bed time will often cut short the attack. **Atropine** in doses of a sixtieth of a grain when the secretion is profuse.

HEADACHE. Tea or coffee will relieve headache from nervousness or exhaustion. **Belladonna** three minims of the tincture every three hours, when pain is over brows and in eyeballs. **Arsenic** in three drop doses t. i. d. for neuralgic headache. **Bromide potassium** in thirty grain doses for sick or nervous headache. **Sodium phosphate** teaspoonful t. i. d. in bilious headache. **Acetanilid** in five grain doses every thirty minutes until relieved or until three doses have been taken.

HEART, DISEASES OF.—**Morphine**, hypodermically, in dilated heart and general dropsy therefrom. **Iron** is of great utility in the irritable heart of anemia. **Ergot** is useful in dilated heart. **Digitals** is remarkably beneficial in rapid action with low tension and valvular lesions. **Bromide potassium** in ten grain doses t. i. d. is useful for over-action and simple hypertrophy. **Quinine** in tonic doses for cardiac weakness. **Atropine** is a prompt cardiac excitant. **Alcohol** in form of brandy or wine, when the heart is suddenly enfeebled by fright, loss of blood, accident, etc. **Arsenic** Fowler's sol. in three drop doses t. i. d. after meals, for breathlessness on exertion from weakly-acting heart. **Strychnine** in medicinal doses strengthens the heart beats.

HEMIPLEGIA.—**Strychnine** by hypodermic injections into the paralyzed muscles most useful. **Massage.** **Galvanism** to brain and cord and **faradism** to the to the muscles if they waste.

HEPATIC DISEASES.—**Chloride of gold and sodium** is effective in sclerosis. **Phosphate sodium** is one of the most useful and certain cholagogues. **Ammonium chloride** is useful in catarrh of the bile ducts. **Rhubarb, aloes and podophyllum** are effective. **Nitro-muriatic acid** is useful in ten drop doses t. i. d. in torpor of the liver.

HERNIA.—**Chloroform** by inhalation to assist reduction.

HERPES.—**Morpha oleate** applied locally in herpes zoster. **Iodine liniment** applied once. **Hot fomentations** will often disperse the development of herpes labialis. **Calomei** and **zinc** ointments are curative. **Galvanism** in cases of herpes zoster.

HICCUGH.—**Morphia** grs. $\frac{1}{4}$ hypodermically. **Apomorphia** gr. $\frac{1}{2}$, hypodermically, will sometimes cure. **Mustard** one drachm infused in four ounces of boiling water has cured obstinate cases.

HOARSENESS. Turkish bath at the onset will cut it short. **Borax** the size of a pea dissolved in the mouth. **Ipecac wine** as a spray to throat. **Alum** as a spray, ten grains to an ounce of water. **Nitric acid** is highly effective in hoarseness of singers and reflex from the stomach in ten minim doses of the dilute acid. **Atropine** in hysterical aphonia.

HYDROCELE. **Iodine tinct.** injected into the sac after removal of the fluid. **Carbolic acid** and **nitrate silver** a strong solution injected in the same way.

HYPOCHONDRIASIS. **Potassium bromide** fifteen grains t. i. d. **Gold and sodium chloride** in gr. $\frac{1}{2}$ doses t. i. d. gives excellent results in the hypochondria of the aged. **Laudanum** in small doses is a remedy of the first importance. **Arsenic** gives good results in the aged. **Asafoetida** in cases with flatulence.

HYSTERIA.—**Cod-liver oil** and the "rest cure" are useful. **Aconite tinct.** for fluttering of the heart in nervous persons. **Potassium bromide** in large doses prevents paroxysms. **Opium**, a drop of laudanum with two of the tinct. of nuxvomica four times daily for weight on head and flushings. **Valerian** useful.

IMPETIGO.—**Quinia** in tonic doses very efficient. **Mineral acids** in cases of indigestion. **Zinc ointment** applied relieves. **Sulphur** internally is of service. **Poultices** may be applied at night to remove scabs. **Glycerine of tannin** is a good application. **Sugar of lead** in solution may be applied.

IMPOTENCE. **Strychnia** in large doses sometimes useful when spermatorrhoea exists. **Cantharides tinct.** in twenty to thirty drops t. i. d. with iron and nux

vomica very useful. **Cannabis indica** and phosphide of zinc stimulation. **Ergotine** a hypodermic injection about the dorsal vein of **Ergot** by the stomach increases the vigor of the erections. **Gold chloride** increase sexual activity in gr. $\frac{1}{2}$ t. i. d.

INCONTINENCE OF URINE. **Belladonna tinct.** ten to twenty drops t. i. d. best remedy for children. The child should be waked at midnight water. **Ergot** said to be useful when due to paresis of bladder from the iodide in ten drop doses t. i. d. in anemic subjects. **Collodion** form a cap over end of prepuce. **Chloral** is sometimes effective in **Strychnia** good in old people with paralysis of the bladder. **C. tinct.** two drops t. i. d.

INDIGESTION.—**Acid hydrochloric** ten minims t. i. d. of the diluted acid good in atonic dyspepsia and indigestion. **Alcohol** in small doses excellent stomachic tonic. **Bismuth** for painful indigestion and nausea in indigestion with torpor of large intestine and pasty motion.

INSOMNIA.—**Potassium bromide** in thirty grain doses at bed hour. **Pa** thirty to fifty minims is said to be very effective. **Chloral** is the most and generally useful hypnotic in fifteen to twenty grain doses at **Morphine** and **atropine** hypodermically is the best sleep producer in pain mania, and melancholia. **Alcohol** is efficient when due to anaemia. **Warm bath** at bed hour often succeeds.

INTERTRIGO. **Bismuth subnitrate** dusted over the surface. **Tannin** in a useful application. **Zinc ointment** is very efficient in some cases.

INTESTINAL CATARRH.—**Ammonium chloride** five grains t. i. d. is a remedy. **Salol** is a useful drug into three to five grain doses t. i. meals. **Bismuth** is one of the best remedies. **Calomel** in minute quantities is of great service. **Hydrastis** is a useful drug in this condition.

IRITIS. **Atropine** two to four grains to the ounce, a drop or two in the to six times daily to prevent adhesions. **Eserine** to break up adhesions diminish intra-ocular tension. **Mercury** in specific iritis.

JAUNDICE. **Mercury**, in form of gray powder, gr. $\frac{1}{2}$ four times daily at is very valuable. **Calomel** in small doses gives good results. **Benzol** remove bile from the system. **Sodium phosphate**, a teaspoonful t. i. useful. **Skim-milk** cure. **Ammonium chloride** gr. v. t. i. d. is b. **Nitro-muriatic acid** dil. in ten minim doses t. i. d. **Rhubarb**, **aloes** and **phyllum** are excellent remedies in this condition.

JOINTS, DISEASES OF.—**Blisters**, a succession of them about the joints of synovitis. **Nitrate silver**, gra. xx to an ounce of nitrous ether, is an application to check inflammation. **Oleate of mercury and morphine** into the joint is of great service in inflammatory affections of joints. **Ism** and **massage** are highly useful.

LACTATION. **Atropine**, four grains to the ounce of rose water, applied to the gland to arrest secretion. **Phosphate of lime** is highly useful in the of lactation.

LARYNGITIS. **Aconite tinct.** in small doses frequently. **Tannin** and **g** applied to the throat.

LEUCORRHOEA.—**Bicarbonate of potash**, or **soda** one drachm to a pint when discharge is alkaline. **Carbolic acid**, one drachm to a quart of **Alum**, one drachm to a pint of water, is a useful injection. **Zinc sulphate** be used also. **Iodoform** and **tannin** packed about the cervix is highly **Acetate of lead** properly diluted is an excellent local application. **B** may be combined with fluid extract of **hydrastis**.

LICE. **Bichloride of mercury** solution destroys lice on all parts of the body the essential oils will destroy lice.

LUMBAGO.—**Chloroform**, a few drops injected deeply, is remarkably beneficial. **Galvanism** usually effects a cure. **Paradism** is sometimes useful. **Mo** hypodermically, affords prompt relief. **Heat** to the back for three **Massage** is curative in some cases.

MENORRHAGIA.—**Ergot** is very useful in all forms. **Gallic acid** sometimes ceeds well. **Potassium bromide** in fifteen to thirty grain doses t. i. d. arrests promptly. **Cinnamon**, the oil in drachm doses given several daily, is highly recommended.

MYALGIA.—**Massage** will usually do good. **Galvanism** will surely cure. **Faradism** may succeed. **Acetanilid** is an efficient remedy. **Laudanum**, applied with friction, gives relief.

NEURALGIA. **Morphine**, hypodermically, is the most efficient remedy for the relief of pain. **Galvanism** is the most decidedly curative agent. **Massage** gives much relief. **Iron**, for the existing anemia. **Bromide potassium** is useful in some cases. **Arsenic** will benefit some cases. **Strychnine** long continued in depressed states of the nervous system. **Anæsthetics** promptly relieve. **Acetanilid** will relieve in some cases.

OBESITY.—**Acids, alkalies, bromides** and **potassium permanganate** will promote destructive metamorphosis.

ORCHITIS. **Mercury**, the oleate painted over. **Ice** in a bag kept applied. **Iodine tinct.** locally applied. **Nitrate of silver** in nitrous ether painted over.

PARALYSIS.—**Strychnine**, injected into the muscular substance, is of the greatest utility in all forms of paralysis, but must be used after local trouble in the nerve centers have subsided. **Phosphorus** should be given to restore nerve-matter, and in hysterical paralysis. **Cod-liver oil** is useful to restore nervous matter. **Ergot** is useful in some cases. **Iodide of potassium** in paralysis due to gumma. **Galvanism** and **faradism** are first in importance in the treatment of paralysis. **Massage** is an important adjunct to other kinds of treatment.

PEMPHIGUS. **Arsenic**, Fowler's sol., five drops t. i. d. after meals, for chronic form. **Belladonna tinct.**, five minims t. i. d. for the acute.

PERITONITIS. **Morphine**, hypodermically, is the most efficient drug. Must be given freely. **Quinine** in full doses at the onset. **Turpentine** when there is tympanites, especially useful in puerperal peritonitis. **Aconite** for the fever at onset. **Locally**, ice bag to abdomen; counter-irritation; heat; poultices; leeches.

PERSPIRATION, EXCESSIVE.—**Belladonna**, as a liniment, locally to the affected part, and tinct. internally. **Ergot** is said to arrest sweating. **Picrotoxin**, a minute dose, will stop for several nights the sweats of consumption. **Atropine** for "night sweats." **Pilocarpine** in $\frac{1}{4}$ grain doses thrice daily. **Oxide of zinc** in two grain doses nightly to control profuse colliquative sweating.

PHARYNGITIS. **Silver nitrate** two grains to the ounce of water is effective in many cases. **Tannin** locally, in powder or solution. **Hydrastis** is an excellent topical application. It may be taken internally in doses of five to ten drops t. i. d.

SALIVATION.—**Alcohol** diluted as a gargle. **Iodine** two drachms of the tincture to eight ounces of water. **Acids** in small medicinal doses as astringents. **Bromide of potassium** very beneficial in salivation of pregnancy.

SCABIES. **Carbolic acid** locally to destroy the parasite. **Sulphur** after a warm bath with soap and water, rub in ointment composed of two parts of sulphur, one of carbonate of potash and eight of lard. **Clothing**, submit all clothing which cannot be boiled to a temperature between 250 and 300. **Sulphate of copper** used as a lotion is successful.

SCIATICA. **Methylal** a twenty per cent. mixture with oil, rubbed in along the nerve is effective. **Morphine** hypodermically. **Chloroform** and **ether** injected deeply in old cases is beneficial. **Poultices** applied very hot. **Galvanism** very effective. **Nitrate of silver** injected ten to twenty drops of the solution deeply near the affected nerve. **Aquapuncture** is much used recently.

SCLERODERMA.—**Cod-liver oil** an important remedy. **Galvanism** (central) is recommended. **Phosphates** and **hypophosphites** with or without cod-liver oil.

SCROFULA. **Calomel** ointment to sores. The **Phosphates** are very beneficial to improve the nutrition. **Iron** long continued is useful. **Tinct. of iodine** applied over scrofulous glands. **Cod-liver oil** is of great service. **Chloride of calcium** in ten to twenty grain doses in milk after food is effectual in enlarged glands and chronic arthritis.

SEA-SICKNESS.—**Chloral** fifteen to thirty grains every four hours. **Spinal kebab** sometimes of service. **Nitro glycerine** has been recommended. **Chloroform** one drop by the stomach frequently repeated. **Bromide of soda** one half to one drachm taken before embarking is the best remedy. **Morphine** in small doses hypodermically. **Nitrite of amyl** inhaled for prevention. **Nitro-glycerine** by the stomach is useful.

SLEEPLESSNESS.—(See Insomnia).

SNEEZING.—**Iodine inhalations** in sneezing with itching of nose. **Camphor** inhalations or the powder sniffed up the nose is useful in sneezing with running from nose and eyes. **Arsenic** one drop of the liquor three times a day in sneezing of asthma. **Iodide of potassium** ten grains several times daily.

SORE-FEET.—**Washing soda**, one tablespoonful to one-half gallon of warm water as foot-bath.

SORES.—**Alum** in powdered form to secreting sores. **Iodoform** is good used as a dusting powder over all forms of sores. **Opium** and **glycerine** as an application for pain. **Sulphate of zinc** is applied locally to sloughing sores with benefit. **Carbolic acid**, **boracic acid** and **salicylic acid** are applications of great value as antiseptics, deodorants and alteratives. **Potassa chlorate** in powder is remarkably beneficial. **Camphor** as a dusting powder is effective.

SPERMATORRHOEA.—**Nux vomica** is useful as a tonic. The tincture of the chloride of iron and arsenic are remedies of value when anæmia is present. **Belladonna**, one-fourth grain of the extract with one and one-half grains of zinc sulphate three times a day is often of use. **Camphor** in large doses may be used with benefit.

SPRAIN.—**Cold douche** with salt added is beneficial to relieve stiffness.

STINGS.—Weak solutions of **ammonia** are effective.

SUN-STROKE.—**Cold douche** when patient is struck down unconscious.

SWEATING.—**Atropine** is very efficacious in sweating of phthisis, one-sixtieth of a grain at bed-time. **Oxide of zinc** is very effective in night-sweats of phthisis. **Oxide of zinc** three grains and one-half grain of belladonna, given at bed-time. **Picrotoxin** from one hundred and eightieth to one-sixtieth of a grain, has been very successful. **Pilocarpine** in one-twentieth of a grain doses thrice daily, is often useful. **Sponging** with acidulated water, often effective.

SYNOVITIS.—**Blisters** every night are useful. **Cod-liver oil** is useful if patient is debilitated. **Iodine**, applied to joint in chronic cases. **Massage** may be tried. **Nitrate of silver** in nitrous ether may be applied to the joint. **Mercury** and **Morphia**, oleate of, applied locally.

TETANUS.—**Bromide of potassium** in large doses, one drachm every three or four hours is a remedy of great value. **Morphine** injected into the affected muscles gives relief. **Paraldehyde** given in sufficient quantity has often proved successful. The maximum dose (two and one-half drachms) has been given without ill effect. **Chloral** in large doses is of great value. **Ether** spray to spine every two hours.

THIRST.—**Hot drinks** are of service. **Ice**, allowed to melt in the mouth, is useful. **Acid drinks** are effective to allay thirst in fevers.

THRUSH.—**Boracic acid** solution mixed with honey ($\frac{1}{2}$) is very useful. **Sulphurous acid** solution, strong or diluted, applied locally. **Salicylic acid**, one part (dissolved in alcohol) to 250 of water.

TOE NAIL, INGROWING.—**Liquor potassæ**, two drachms to the ounce of water. A piece of cotton saturated with the solution is pressed under the ingrowing nail, repeated each morning; the nail becomes thin and can be pared away without pain.

TOOTHACHE.—**Opium** or **morphine** (solution) dropped in the cavity. **Oil of cloves**, **carbolic acid** or **resorcin** in the decayed tooth are effective. **Carbonate of soda** (a saturated solution) held in the mouth stops the pain.

ULCERS.—See Sores.

URTICARIA.—**Chloroform** ointment for the itching. **Nitric acid**, diluted, as a wash for itching. **Alkaline washes** should be used. **Warm baths**.

VOMITING.—**Alum** in six to ten grain doses in obstinate vomiting of phthisical patients. **Nux vomica** and **Ipecac** are useful when tongue is coated. **Morphine** hypodermically. **Mercury** as gray powder, one-third of a grain every two hours. **Lime water** and milk in vomiting of infants. **Chloroform**, in drop doses. **Bismuth**, ten to fifteen grains every two hours, very effective in vomiting caused by gastric disturbance. **Champagne** or brandy, iced, in small doses frequently repeated, often useful.

VULVITIS.—**Lime water**, locally. **Alum**, sixty grains to a pint of water, every two hours, as injection. **Glycerine of Tannin** can be used with advantage.

WARTS.—**Mercury**, nitrate of, locally applied. **Arsenious acid** as caustic. **Chromic acid**, a solution of 100 grs. to the oz. applied carefully with a glass rod

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